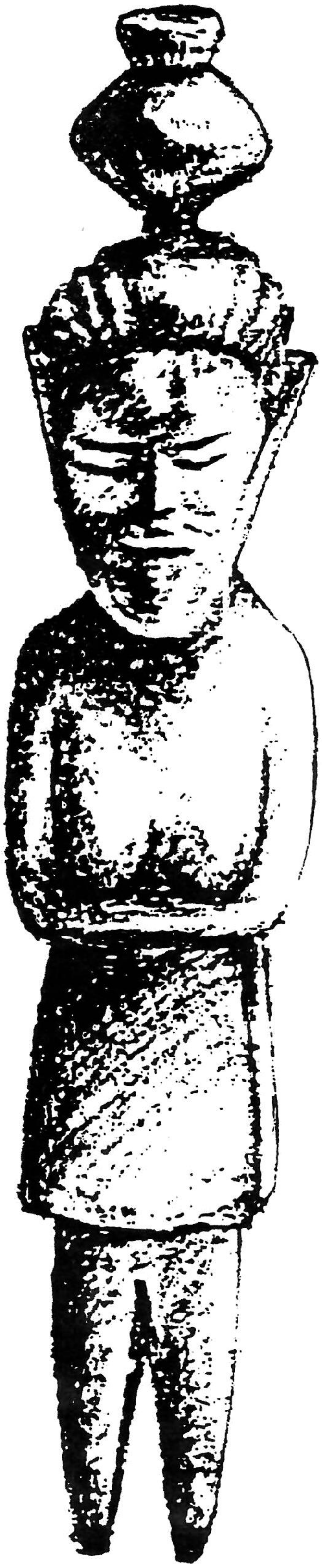
MOTHER TONGUE

JOURNAL OF THE ASSOCIATION FOR THE STUDY OF LANGUAGE IN PREHISTORY



CONTENTS

ISSUE XVI, 2011

1 Reflections on Archaeology and Genetics: Selected Discoveries 2011 *James B. Harrod*

Some Connections of Indo-European

11 On the question of the relationship of Indo-European and Ugrofinnic *Holger Pedersen* (1933) Translated by *Nicholas Davidson*

23 The Chinese primordial giant Pangu and his possible Indo-European origin *Václav Blažek*

Extinct Languages of the Mediterranean Region

35 Notes on Minoan Phonetics and Vocabulary *Sergej A. Jatsemirskij*

63 On the Origin of Milyan Nouns *Vitaly Shevoroshkin*

Language History in Africa

103 Surmic Numerals *Václav Blažek*

Dene-Caucasian Languages

113 Words related to the most ancient Eurasian food legumes in the languages of the hypothetical Dene-Caucasian macrofamily *Aleksandar Mikić*

125 Brian Houghton Hodgson: a pioneer of the Sino-Caucasian hypothesis *John D. Bengtson*

Theoretical Issues in Paleolinguistics

137 The myth of rapid linguistic change IV: The evidence from Egyptian *Jonathan Sherman Morris*

Book Review

199 *Kinship, Language and Prehistory: Per Hage and the Renaissance in Kinship Studies.* Ed. Doug Jones and Bojka Milicic
Reviewed by *Jonathan Sherman Morris*

Notices & Miscellanea

MOTHER TONGUE **Issue XVI, 2011**
Journal of the Association for the Study of Language in Prehistory

OFFICERS OF ASLIP

President:
Michael Witzel
Department of Sanskrit
and Indian Studies
Harvard University
1 Bow Street
Cambridge, MA 02138
U.S.A.
witzel@fas.harvard.edu
Tel. 617-495-3295
Homepage:
http://www.people.fas.harvard.edu/~witzel/mwpage.htm

Vice-President:
John D. Bengtson
5108 Credit River Drive
Savage, MN 55378
U.S.A.
jdbengt@softhome.net
Tel. 952-440-5538
Homepage: http://jdbengt.net/

Secretary-Treasurer:
Michael T. Lewis
20 Duane Avenue
West Newton, MA 02465
U.S.A.
lewismtc@rcn.com
Tel. 617-964-0978

MOTHER TONGUE **Editor:** John D. Bengtson (see above)

Technical Advisor: Brita M. Bengtson http://www.bmgb.net/index2.html

BOARD OF DIRECTORS

Václav Blažek (Masaryk University)
Ronald Christensen (Lincoln, Mass.)
Murray Denofsky (Somerville, Mass.)
Frederick Gamst (Los Osos, Calif.)
Phillip Lieberman (Brown University)
Jan Vansina (Madison, Wis.)
Allan R. Bomhard (Charleston, S.C.)
Gyula Décsy (University of Indiana)
Harold C. Fleming (Boston University)
John Robert Gardner (Gloucester, Mass.)
Michael Puett (Harvard University)
Stephen Zegura (University of Arizona)

COUNCIL OF FELLOWS

Raimo Anttila (University of California, L.A.)
Luigi Luca Cavalli-Sforza (Stanford University)
Vladimir A. Dybo (Russian Academy of Sci.)
Sydney M. Lamb (Rice University)
Merritt Ruhlen (Stanford University)
Ofer Bar-Yosef (Peabody Museum, Harvard)
Aharon Dolgopolsky (University of Haifa)
Vyacheslav V. Ivanov (Russ. Academy of Sci.)
Colin Renfrew (Cambridge University)
Vitaly Shevoroshkin (University of Michigan)
George S. Starostin (Russian State University of Humanities)

ISSN 1087-0326

ASLIP Homepage: http://www.aslip.org

Introduction to *Mother Tongue* Issue XVI

The issue begins with a summary of some the recent literature on archaeology and human genetics, provided by James B. Harrod.

The next section concerns the Indo-European language family and its possible connections, genetic or otherwise. The Danish linguist Holger Pedersen (1867–1953) was not only "arguably the greatest Indo-Europeanist of the 20th century," but also an early advocate of the Nostratic theory, and the scholar who formulated the name "Nostratic" itself. Nicholas Davidson has done us the great service of translating Pedersen's 1933 article[1] in which he laid out some grammatical homologies between Indo-European and Finno-Ugric that he characterized as "a sum of equivalences that excludes chance." In the next article Václav Blažek discusses the Chinese mythical figure *Pángŭ* (盤古) and the possibility that this myth was of Indo-European origin.

Two articles concern extinct languages of the Mediterranean region, on Crete and in Anatolia (Asia Minor). Sergej A. Jatsemirskij provides some "Notes on Minoan Phonetics and Vocabulary." In Jatsemirskij's opinion Minoan belonged to the Tyrrhenian (Tyrsenian) family[2] and exerted considerable influence on the Greek language before dying out. Next ASLIP Council Fellow Vitaly Shevoroshkin contributes some etymological notes about more than 200 nouns of the Milyan (Anatolian) language.

In the next section Václav Blažek explores the numeral words of the Surmic family (part of the East Sudanic branch of the Nilo-Saharan macrofamily), which he shows to be heavily influenced by the neighboring East Cushitic (Afro-Asiatic) languages.

The Dene-Caucasian (Sino-Caucasian) hypothesis has been discussed many times in this journal, beginning with the first issue. Now Aleksandar Mikić, a specialist in food crops, gives his perspective on words for legumes in Dene-Caucasian languages. John Bengtson writes about Brian Houghton Hodgson, whose 1853 article was possibly the first inkling of the Sino-Caucasian hypothesis fleshed out some 130 years later by Sergei Starostin.

If deep linguistic hypotheses like Nostratic and Dene-Caucasian are to be taken seriously it is necessary to address the commonly held belief that "the comparative method does not apply at time depths much greater than about 8000 years" (J. Nichols). Now Jonathan Morris offers his fourth installment of "The myth of rapid linguistic change," in which he follows the Egyptian language from the earliest Dynastic texts through the latest Coptic records, aiming to reinforce his contention that language change is not quite as "rapid and remorseless" (R.L. Trask) as commonly supposed by historical linguists.

The important book *Kinship, Language, and Prehistory*, edited by Doug Jones & Bojka Milicic (2011), is reviewed by Jonathan Sherman Morris.

We apologize for the late publication of this issue.

---

[1] "Zur Frage nach der Urverwandtschaft des Indoeuropäischen mit dem Ugrofinnischen."

[2] Also including Lemnian, Etruscan, and the extinct Raetic language of the Alps.

LATE BREAKING NEWS

This was just received from Anna Dybo in Moscow:

> Today at night (19-20 July) an outstanding linguist, one of fathers of the Nostratic theory, **Aharon Dolgopolsky**, died in Haifa. He was 81 and passed away sitting before his Mackintosh.

(Forwarded by Allan R. Bomhard to MTLR discussion site, July 21, 2012 MTLR@yahoogroups.com)

A full obituary article will be published in the next issue of *Mother Tongue.*

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

Reflections on Archaeology and Genetics: Selected Discoveries 2011

James B. Harrod
Adjunct Instructor, Maine College of Art
Director, Center for Research on the Origins of Art and Religion

This is neither a comprehensive nor scientific review of major studies over the last year, but some reflections on studies I think might be relevant for long-range reconstruction of the evolution of *Homo sapiens sapiens* language families.

Notes on Out-of-Africa

Actually I'd like to begin with two earlier studies on mtDNA archaeogenetics.

- Soares P, Ermini L, Thomson N, Mormina M, Rito T, Röhl A, Salas A, Oppenheimer S, Macaulay V, Richards MB. 2009. Correcting for purifying selection: an improved human mitochondrial molecular clock. *American Journal of Human Genetics* 84,6: 740-59.
- Soares P, Achilli A, Semino O, Davies W, Macaulay V, Bandelt HJ, Torroni A, Richards MB. 2010. The archaeogenetics of Europe. *Current Biology* 20,4: R174-83.

Soares, Ermini et al (2009) provide a global analysis of mtDNA archaeogenetics and uses, I believe, the most up-to-date molecular clock dating procedures. The main article gives the overview with some TMRCA (Time to Most Recent Common Ancestor) dates for major mtDNA haplogroups. Using their clock they obtain dates that are somewhat older than previous clocks provide. This moves mtDNA dating back to dates that seem better correlated to archaeological dates. This study is now the 'gold' standard for mtDNA archaeogenetics. They give a full listing of a hundred or more mtDNA TMRCA dates in their Supplementary Information file, which is available online.

Among many interesting findings, Soares et al (2009: 752) observe: "in the context of the southern-coastal-route model, it should be noted that although the distribution of haplogroup M has also been used to support the southern route model, the age of haplogroup M in India, at 49.4 kya, is significantly lower than in East Asia, at 60.6 kya... At face value, this could suggest an origin of haplogroup M in East Asia and later migration back into South Asia, suggesting that it was a 'pre-M' lineage that initially crossed South Asia." In other words, to explain how it is that M is in East Asia and not Europe, the hypothesis was proposed that L3'M'N out-of-Africa into SW Asia somehow split there, sending

N north into Europe and M along a southern-route to SE Asia. This model appears refuted by Soares et al. By implication the entire 'Southern-Route' model becomes suspect as I suggested it was in *Mother Tongue* (Harrod 2006), though I retained the phrase in my title. In effect, the Southern-Route model is not supported by archaeogenetics or archaeology.

Soares et al date the emergence of L-mtDNA 'Eve' at ~192 kya and L0 at ~150 kya. I suggest that these dates can be correlated to the emergence of Proto-*Sapiens-Sapiens*. By ~140 kya L1-mtDNA emerged, which is found in highest frequency in current Hadza, Khoisan-speakers. Soares et al date the emergence of L2-6 to around ~120 kya, and in current population samples, I note, high frequency occurs in Central African Mbuti (Eastern Central Sudanic) and Sandawe (Khoisan). Soares et al give the TMRCA of L0'f'a as ~108 kya, which I note has high frequency in Burunge (Cushitic). Thus I suggest that initial forms of these languages have emerged in correlation to these mtDNA haplogroup emergences. Curiously, Soares et al give no date for the out-of-Africa mtDNA haplogroup L3'M'N. For this we might turn to Batini, Lopes et al (2010), who put the TMRCA of L3 at ~101 kya, and Behar, Villems et al (2008), of L3'M'N at 94 kya.

How many out-of-Africa diffusions occurred around this time? Until recently we had no archaeological dates for any clear diffusion, archaeological or fossil. Several recent studies clarify and update our understanding. Perhaps the most important are the discovery of an out-of-Africa MSA with handaxes at Jebel Faya, U.A.E. dating at least 112,000 years ago (Armitage et al 2011) and a separate cultural diffusion of Nubian Complex to Aybut Auwal, southern Oman, (OSL weighted mean) ~107 kya (Rose, Usik et al 2011).

- Armitage SJ, Jasim SA, Marks AE, Parker AG, Usik VI, Uerpmann H-P. 2011. The Southern Route "Out of Africa": Evidence for an Early Expansion of Modern Humans into Arabia *Science* 334, 488: 453-456.

- Rose JI, Usik VI, Marks AE, Hilbert YH, Geiling JM, Galletti CS, Parton A, Morley MW, Černý V, and Roberts RG. 2011. The Nubian Complex of Dhofar, Oman: An African Middle Stone Age Industry in Southern Arabia. *PLoS ONE* 6.11: e28239.

These studies clearly indicate that at least two diffusions occurred during the last Interglacial MIS5c-e (~98-125 kya). Climatically, the Interglacial is the optimum time for out-of-Africa diffusion, and now we see it is supported both by archaeology and by archaeogenetics.

Thus, so far, based on archaeology, there is evidence for only four possible diffusions out-of-Africa. I summarize the findings in the following table.

MSA/MP with handaxes	(handaxes, centripetal Levallois cores, discoids)
	Abdur Reef, Buri Peninsula, Red Sea Cost, Eritrea, Early MSA with handaxes and flake tools, (TIMS U-series on coral), 4 strata, 115 to 135 kya or ~125±7 kya; elephant, hippo, rhino, bovid, crocodile and oysters (Walter, Buffler et al 2000); (Bruggemann, Buffler et al 2004) distinguishes 2 distinct tool-kits: (a) handaxes (of Acheulian type, made from volcanics and obsidian), associated with oyster beds (oyster harvesting requiring heavy duty tools) and (b) MSA flakes and blades primarily made from obsidian, mostly in near shore and beach environments and associated with the large mammals and among remains of oyster, giant clams and crab parts, possibly reflecting two tool-kits of the same peoples. At later phases, oysters were not abundant and only the flake and blades occur, associated with bivalves, gastropods and crustaceans.
	Jebel Faya 1, Sharjah, U.A.E., Assemblage C, (OSL) mean of 3 dates ~112 kya; eliminating the two outliers, 123±10 kya; small handaxes, thick bifacial foliates, hard hammer blades (no Levantine features); derived from E/NE African *façonnage* to make handaxes and foliates (Marks 2009; Armitage et al 2011)
	Har Karkom, Negev, Israel, multiple sites, no date, labeled 'Mousterian of Acheulian Tradition' (Anati E, 2006 online) [*This is a term from MP Europe, but perhaps better to classify as 'MSA with bifaces'. If so sites may support diffusion of an Abdur type industry.*]

Early Nubian Complex	(with Nubian Levallois reduction plus bifacial foliates and rare handaxes at only some sites)
	Sai Island, northern Sudan, OIS5
	Taramsa 1, Upper Egypt, (OSL) ~120 kya\
	Sodmein Cave J-complex, eastern desert, Egypt, (TL mean) 118 kya
	Nazlet Khater, Lower Nile, Upper Egypt. (geostratigraphy) ~110 kya
	Aybut Auwal, southern Oman, Nubian complex, (OSL weighted mean) 106.6±6.4 kya, one of 100 sites in Dhofar region, Nubian Complex (in Africa ~128 to 74 kya); evidence for spread of a distinct MSA lithic industry out-of-Africa and across the southern Red Sea some time in the first half of MIS5 (Rose, Usik et al 2011).
Aterian	
	Ifri n'Ammar (Morocco), (TL) Upper OS, tanged items as well as personal ornaments (shell beads) 83.3 ± 5.6 kya Lower OS, MSA lacking tanged pieces, 130.0 ± 7.8 kya; Upper OI, tanged items, earliest appearance of tanging, 145 ± 9 kya. (Richter, Moser et al. 2010)
	Har Karkom, Negev, Israel, multiple sites, 'Aterian', no date (Anati E, 2006 online)
	No evidence to date for Aterian in Arabia
Tabun C Industry	
	Skhul (TL, U-series, ESR) ~between 100 and 130 kya
	Hummal, El Kowm Basin, central Syria (TL) 98±16 and 128±18 kya (Hauck et al 2011) [*N.B. This site is on a MIS5e paleolake only 50 miles from the Euphrates River.*]
	Qafzeh, ~90 kya
	At least 6 other sites in Israel, Lebanon and Syria
	Tabun C has earlier datings at Hayonim Cave, Israel (TL) ~150 kya and at its type site, Tabun Cave, multiple layers from ~165 to 220 kya
	[*Hauck et al 2011 shows that the Tabun C Industry has spread further than previously known. However, it seems no one is able to integrate these Tabun C industries into any out-of-Africa scenario, and thus it seems to remain local to SW Asia?*]

As the Table suggests, there is no evidence for diffusion of the Tabun C industry out-of-Africa, and weak evidence for Aterian diffusion. There is confirmed evidence for an MSA with handaxes and for the MSA Nubian Complex with foliates. There is no archaeological evidence as yet to support any later MSA or LSA diffusions out-of-Africa. Thus the arguments for Handaxe MSA and Nubian MSA diffusions during the Interglacial are now the unchallenged standard.

Genomic studies in the last couple years have discovered that all human populations outside of Africa have Neanderthal and also Denisovan admixture. The Neanderthal draft genome (Green, Krause et al 2010) suggests that "gene flow from Neanderthals into the ancestors of non-Africans occurred before the divergence of Eurasian groups from each other" and in present populations ranges from about 1 to 4%. A recent summary of genomic admixture:

- Abi-Rached L, Jobin MJ, Kulkarni S, McWhinnie A, Dalva K, et al. 2011. The Shaping of Modern Human Immune Systems by Multiregional Admixture with Archaic Humans. www.sciencexpress.org / 25 August 2011 / Page 1 / 10.1126/science.1209202.

Yotova et al (2011) demonstrates an X-linked Neanderthal admixture. Interestingly, the Yotova study shows highest admixture rates among Native American, NW European and western South Asia populations.

- Yotova V, Lefebvre J-F, et al. 2011. An X-linked haplotype of Neandertal origin is present among all non-African populations. *Molecular Biology and Evolution* (Early online January 25, 2011).

From these studies we may infer that Neanderthal admixture began in SW Asia during the diffusion out-of-Africa into SW Asia and I suggest may have been intensified by the geographic bottlenecks of the Zagros crossing to South Asia and the Transcaucasus crossing into western Eurasia.

I note that with respect to hominin fossil evidence in SW Asia, *Homo sapiens sapiens* occurs only at Tabun C Industry sites, such as Skhul and Qafzeh (~85-130 kya). After this, there are only Late Levantine Mousterian (Tabun B Industry) sites (~75-45 kya), and only Neanderthal fossils have been found at them. Initial Upper Paleolithic first occurs at Boker Tachtit, around ~50 kya, and appears to diffuse into Europe by ~48 kya. The earliest fossil evidence in SW Asia for *Homo sapiens sapiens* subsequent to Skhul-Qafzeh, appears possibly—the taxonomics is in question—at Ksar Akil, Lebanon, ~37 kya, next at Qafzeh Layer 11, ~32-29 kya, and in either case, thus post-Neanderthal presence. This suggests that the Skhul and Qafzeh *sapiens sapiens* have more relevance to out-of-Africa models than previously hypothesized, and they need to be reconsidered in the light of the new admixture genomics.

Notes on Europe

Soares, Achilli et al (2010) follow up on Soares, Ermini (2009) with an area study on Europe and this is now the most recent mtDNA archaeogenetic overview for Europe. It should be compared to Richards, Macaulay et al (2000), one of the first attempts to correlate mtDNA archaeogenetics with Stone Age time periods in Europe.

- Richards M, Macaulay V, Hickey E, Vega E, Sykes B, Guida V, Rengo C, Sellitto D, Cruciani F, Kivisild T, Villems R, Thomas M, Rychkov S, Rychkov O, Rychkov Y, Gölge M, Dimitrov D, Hill E, Bradley D, Romano V, Calì F, Vona G, Demaine A, Papiha S, Triantaphyllidis C, Stefanescu G, Hatina J, Belledi M, Di Rienzo A, Novelletto A, Oppenheim A, Nørby S, Al-Zaheri N, Santachiara-Benerecetti S, Scozzari R, Torroni A, Bandelt H-J. 2000. Tracing European Founder Lineages in the Near Eastern mtDNA Pool. *American Journal of Human Genetics* 67: 1251–1276.

Compared to Richards et al, Soares (2010) gives a more refined list of haplogroups by time period, especially for the latter part of the Upper Paleolithic into the Neolithic. They also show that for the Initial and Early Upper Paleolithic peoples entering Europe by around 50,000 years ago had variants of U-mtDNA. Neither Richards et al (2000) or Soares et al (2010) refer to fossil hominin mtDNA studies and mention only a few archaeological sites; so one must go to other studies for those correlations.

As I mentioned earlier, Soares, Achilli et al (2010) needs archaeological correlates, and here I have found the work of Hoffecker most relevant. I also throw in my own hypotheses for language family correlates.

- Hoffecker JF. 2009. The spread of modern humans in Europe. *Proceedings of the National Academy of Sciences USA* 106,38: 16040-5. *(HJ2009)*

- Hoffecker JF. 2011. The Early Upper Paleolithic of Eastern Europe Reconsidered. *Evolutionary Anthropology* 20: 24–39. *(HJ2011)*

- Hoffecker JF, Kuz'mina IE, Syromyatnikova EV, Anikovich MV, Sinitsyn AA, Popov VV, Holliday VT. 2010. Evidence for kill-butchery events of early Upper Paleolithic age at Kostenki, Russia. *Journal of Archaeological Science* 37: 1073-1089.

These Hoffecker articles help free us up from the now obsolete view that the first *Homo sapiens sapiens* to arrive in Europe were bearers of the Aurignacian culture around 35-40,000 years ago. I briefly summarize the new paradigm. The first stage is the Initial Upper Paleolithic (IUP), ~50-40 kya—presumably associated with *Homo sapiens sapiens*—the Bohunician culture. Soares, Achilli et al (2010) suggest their genetics was a subclade of U-mtDNA, and I suggest most likely U8, for which they give a TMRCA, ~50 kya, with a homeland in Anatolia or Europe. In current population samples, U8 is sparse across most all of Europe, highest among Kurds of Iran, Qatar, and UAE. R-mtDNA gave rise to U ~54 kya and differentiation of U-subclades occurred in SW Asia around 40 to 50 kya. The language must be some descendent of pre-Afroasiatic that came out-of-Africa 50,000 years earlier, and possibly, I tentatively suggest, some sort of pre-cursor of later Hattic.

The next stage in Europe is the Proto-Aurignacian (IUP), ~45-40 kya, which occurs from Spain to Kostenki, Russia. These are also most likely associated with U-subclades, specifically and to my mind most likely, U4'9, with a homeland between Central Asia and Europe and a TMRCA ~43 kya. Current peoples with high frequency of U4-mtDNA, Ket, Nganasan, Mansi, Kalash, Dargin and Kartvelian appear to have adopted languages from disparate families, and, very tentatively, I suggest that they diffused from the Transcaucasus and were originally speakers of a predecessor of Kartvelian.

It is at this point that a third wave diffuses into Europe, the Classic Aurignacian, ~40-28 kya, probably shortly after the catastrophic Campanian-Ignimbrite volcanic eruption and Heinrich Cold Event 4, ~40 kya. We are fortunate to have a recent genomic analysis of a fossil *Homo sapiens sapiens* from Kostenki 14 (Markina Gora), CLIII (Gorodtsovskayan = Classic Eastern Aurignacian); it has U2-mtDNA (Krause, Briggs et al 2010). Soares et al (2009) gives the U2 TMRCA as ~54 kya. It may come as an intriguing surprise to the reader that in current population samples U2-mtDNA has its highest frequencies in Iran, Gujarat, Uttar Pradesh, Sri Lanka, Karnataka, and several Indus and Madhya Pradesh aboriginal groups, as well as the Kubachi in Daghestan. Several of these groups are Dravidian speakers, others Indo-European, and the Kubachi, NE Caucasian. Given my own review of all U-mtDNA subclades, haplogroup frequencies and associated current languages, it looks to me like the U2 peoples who carried the Classic Aurignacian into Europe were speakers of a precursor of Dravidian. In other words, the artists of Chauvet Cave in France and other Aurignacian artworks appear to be ancestral Dravidians. Personally, I believe that this hypothesis is supported by the basic symbolic patterns of Ice Age Aurignacian art in Europe.

The Aurignacian culture in Europe was followed by the Gravettian, and for this culture there are several fossil mtDNA studies, which indicate R0(HV), H17'29 and N*/N1, and TMRCAs indicating U5 (Soares et al 2009, Soares et al 2010). From my own review of archaeogenetics and archaeology, I suggest U5 correlates to an ancestral Pre-Finno-Ugric, the R0 and H17'29 to a precursor of Sumerian and Basque, and N*/N1 to Pre-NE Caucasic. The archaeogenetics suggests that the Gravettian culture was a mix of several peoples, perhaps with distinct languages, who appear to have created a common artistic-religious symbol system. I am working on a full analysis of all the stages of European and global mtDNA correlations to language macrofamilies.

Interestingly, Yuri Berezkin in *Mother Tongue* (2010: 29) reviews occurrences of the 'rainbow serpent' mythologem and finds it widespread in Tropical Africa and Indo-Pacific Asia, virtually all aboriginal Australian tribes, Central and South America, and surprisingly, it is 'relatively widespread in Europe' (Slavs, Germans, French, Bretons, Balts, Finns, etc.) and also occurs in Central Asia (Persians, Buryat and probably Kalash). How do we make archaeogenetic and archaeological sense out of this motif popularly identified with Australian Aborigines and the so-called 'Southern Route' being found across western Eurasia? Looking at mtDNA haplogroup frequencies from a variety of studies, it seems to me that Persians are predominantly HV/H and Kalash, U4; Finland/Estonia/European Russia, U5 and H/V; Breton, H/V and U5; and East European Slavs, HV/H and U4. From this I infer likelihood of a prior genetic substrate of the rainbow serpent motif in R-mtDNA, which branched off N in South Asia ~67 kya; R giving rise to U (~54 kya) and then the subclades U4'9 (~43 kya) and U5 (~36 kya); and also R→R0 (~38 kya) and R0→HV (~27 kya); and R→P (~52 kya, in Sahul). If we work it backwards from Australia, I note that that continent has 5 mtDNA lineages, the eldest being P subclades deriving from R, R→P4, between ~66/47 kya (Hudjashov, Kivisild et al 2007); O1—and this contradicts the view that N-mtDNA only took a 'northern route'—N→O→O1 (~48 kya, Rasmussen, Guo et al 2011); and also M42, in Australia by ~41 kya. I would guess that the rainbow serpent motif arrived in Australia from its initial settlement around 60,000 years ago carrying a P4 genetics deriving from its R ancestor. Hence, if there is any such thing as a 'rainbow serpent southern route' it appears to correlate predominantly to an R-mtDNA diffusion, which from its inception also diffused into western Eurasia.

Fu et al (2012) contrast genomic U-type mtDNA and H-type mtDNA in current European populations, which indicates post-LGM U-mtDNA Mesolithic hunter-gathering population expansion ~10-15 kya and H expansion ~5-9 kya due to demic diffusion of Neolithic farming peoples from SW Asia.

- Fu Q, Rudan P, Pääbo S, Krause J. 2012. Complete Mitochondrial Genomes Reveal Neolithic Expansion into Europe. *PLoS ONE* 7,3: e32473.

I find this study's overall finding problematic. While archaeogenetic studies of the Bohunician, Proto-Aurignacian and Classic Aurignacian hunter-gatherers suggest they were U-mtDNA peoples, this study does not consider DNA studies that show evidence for N and H subclades, including R0/HV and N*/N1, at Gravettian Paglicci (Caramelli, Lalueza-Fox et al 2003) and H17'29 at Sunghir (Poltoraus, Kulikov and Lebedeva 2004; Brandstätter, Zimmerman et al 2008; Rootstalu, Kutuev et al 2007). Also, while they identify the influx of H subclades in the Neolithic diffusion, they do not consider the equally substantial influx of J and T-types. A clear picture of the mtDNA genetics has implications, I would argue, for the sequencing of the arrival of language macrofamilies into Europe. Gravettian H17 and R0/HV indicate diffusions from the Western Mesopotamian, which I suggest correlates to ancestral Pre-Sumerian-Basque and Gravettian N*/N1, to a Pre-NE Caucasic. The Last Glacial Maximum would have pushed speakers of such language families into refugia in Iberia, southern Italy and the Black Sea or even back into Mesopotamia. Analogously the J, T, and new H-subclades, as well as K and N1a-X1-mtDNA that arrived with the Neolithic farmers would correlate, I suggest, primarily with speakers of Semitic, Hattic, Elamitic and Caucasaic-related languages.

Notes on Iberia/Basque

Finally, knowing the issue of Basque, Caucasian and Dené is of interest to our readers, I mention several recent mtDNA studies pertaining to Basque and other Iberian peoples.

- Gómez-Carballa A, Olivieri A, Behar DM, Achilli A, Torroni A, Salas A. 2012. Genetic continuity in the franco-cantabrian region: new clues from autochthonous mitogenomes. *PLoS One* 7(3): e32851. Epub 2012 Mar 19.

- Gamba C, Fernández E, Tirado M, Deguilloux MF, Pemonge MH, Utrilla P, Edo M, Molist M, Rasteiro R, Chikhi L, Arroyo-Pardo E. 2012. Ancient DNA from an Early Neolithic Iberian population supports a pioneer colonization by first farmers. *Molecular Ecology* 21,1: 45-56.

- Hervella M, Izagirre N, Alsonso S, Fregel RI, de la Rúa C. 2009. Enterramientos en fosa en el Neolítico Antiguo en Navarra: evaluación de las evidencias arqueológicas mediante el estudio antropológico y molecular. *Revista Española de Antropología Física* 30: 31-38.

Archaeogenetically, H-mtDNA is characteristic of the Late Upper Paleolithic (Magdalenian) in the Franco-Cantabrian LGM refugium (Soares, Achilli et al 2010; Richards, Macaulay et al 2000). Neolithic Basque mtDNA does not appear to correlate to the Neolithic demic diffusion, but maintains its ancestral Paleolithic genetics. Fossil mtDNA from Paternanbidea, near Pamplona, Navarra, 6,090-5,960±40 BP [cal. ~7 kya], indicates 1HV, 3H, 2H3, 1U, 1K, 1I (Hervella et al 2009). Currently, Pamplona is a bi-lingual Basque, Spanish area. This is ~66%HV/H, with K being the only apparent Neolithic lineage, though K is also demonstrated for contemporaneous Mesolithic fossils.

Fossil mtDNA J1 and T1/T2 arrived in Europe during the Neolithic (Sampietro et al 2007). The absence of Neolithic demic diffusion J and T (apparently out of a western Mesopotamian and Semitic language area) is notable in contrast to fossils in a 6th-7th century AD Basque cemetery, which show 53%H+3%V+15%J+ 8%T+9%U5+6%U2+3%K (Alzualde 2006). I further note that N*/N1, also considered a signature for the Neolithic demic diffusion, is not identified in either Basque study. From this, I infer that what Cardial ware does occur in Basque sites arrived by trade and not by demic diffusion.

Thus Basque archeogenetics accords with Iberian archaeology in general, which suggests that its Neolithic was an indigenous development. Tools, goat domestication, and jewelry of Neolithic sites in Iberia appear to be continuous with Iberian Mesolithic cultures and thus a local adaptation to Neolithic agricultural and Cardial ceramic influence from the east (Gimbutas 1991:185-186); and this especially seems to apply to the Basque area where the first evidence of Neolithic agriculture in Basque Country occurs ~6 kya (Zapata 2011 online).

Gómez-Carballa, Olivieri et al (2012) identify a uniquely Basque mtDNA lineage, HV4a1a, which most likely arose in the Franco-Cantabrian area around 5.4 kya and remained confined to northern Iberia. The authors note that this lineage and several of its younger branches reveal for the first time genetic continuity in this region and long-term episodes of isolation, which could at least in part explain the unique linguistic and cultural features of the Basque region. This study not only confirms the distinctive emergence of the Basque language and culture ~5 kya, it further demonstrates that at least this haplogroup ancestor of the Basque people had a homeland in Ukraine/Belarus area, where the HV4 subclade originated around 14 kya and then split 13.5 kya with one branch diffusing into the Middle East (Iraq, Jordan, Egypt), HV4a2, ~9 kya, and the other across southern Europe and eventually to the Last Glacial Maximum Basque refugium. While linguists debate the origins of Sumerian, I wonder if this study provides evidence that Basque and Sumerian may have had a common ancestor around 14 kya.

On the other hand with respect to NE Iberian Cardial Neolithic farmers, Gamba, Fernández et al (2012) analyzed fossil mtDNA from sites of the Early Neolithic Cardial Culture (Can Sadurni and Chaves) and Late Early Neolithic (Sant Pau del Camp), which revealed high frequency of N*+X1 (~31%), which have low frequencies in modern populations. They conclude that results are compatible with pioneer colonization by small genetically distinctive groups having cultural and genetic connections with Near East. This finding is similar to previous analyses of fossil mtDNA from northeastern European Linear Band Ceramic (LBK) and French Megalithic sites, which indicated that N1a-mtDNA was 'the signature of the Neolithic demic diffusion' (Haak et al 2005; Deguilloux, Soler et al 2011). My review of mtDNA studies suggests that N→X ~32 kya, X1 ~43 kya (Reidla 2003) and X2 by ~18 kya. The X-root and X2 clade appear to have emerged along the Western 'Silk Route' from the Southern Caspian/Iran area and into the Caucasus and Near East. It is perhaps relevant that a high frequency of X* and N (~21%) occurs among current Avar who are speakers of NE Caucasian (Marchani 2008).

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

Holger Pedersen On Indo-Uralic

Translated by *Nicholas Davidson*[1]

Holger Pedersen should need no introduction: arguably the greatest Indo-Europeanist of the 20th century, more original than Meillet, more consistent than Kuryłowicz, more empirical than Benveniste, protégé of Karl Brugmann, devoted pupil of Hermann Möller and of Johannes Schmidt, discoverer of Pedersen's Law, of the RUKI rule, early defender of the laryngeal theory, precursor of the glottalic theory, whose work on Hittite is constantly cited in Pokorny's Indo-European dictionary, Friedrich's manual of Hittite, and Szemerényi's introduction to Indo-European, to say nothing of his extensive and fertile labors on Albanian, Armenian, and Tocharian, let alone his standing as the leading authority on Celtic, then and now, not to mention his role as advocate and namer of the Nostratic theory — a linguist who cannot without insult be described as "mainstream", so consistently did he place himself at or ahead of the cutting edge of comparative linguistics.

Pedersen produced two works of substantial importance to the Nostratic theory, both of which have suffered from almost-universal neglect to date: an article on Indo-European and Semitic in 1908, and an article on Indo-European and Uralic in 1933. It is the second article that we present here.

On the question of the relationship of Indo-European and Ugrofinnic[2]

by HOLGER PEDERSEN

1. The proof of the relationship between the two language families that cooperate in the European cultural community can be sought in two ways: by the demonstration of grammatical agreement and by the presentation of phonologically regular correspondences in vocabulary. The works of K. B. WIKLUND, Le monde oriental I 45–65, and H. PAASONEN, FUF VII 13–32, have provided us with a starting point for both approaches.

2. The task of investigating the vocabulary and establishing the sound laws, especially emphasized by PAASONEN, has as yet hardly proceeded beyond its initial stages. With regard to the vowels, it is still hardly possible, even after the article by HANNES SKÖLD, FUF XVIII 216–231, to decide for certain whether the Ugrofinnic vowel inventory is to be compared with the pre-ablaut or the post-ablaut Indo-European vowel system. The latter is the more plausible, as

---

[1] Center for Avestic Research, LLC.

[2] English translation of "Zur Frage nach der Urverwandtschaft des Indoeuropäischen mit dem Ugrofinnischen" by Holger Pedersen, in Mémoires de la Société finno-ougrienne LXVII (1933), pp. 308-325. Copyright © 2011 by Nicholas Davidson. All rights reserved.

conversely it is plausible that in the comparison of Indo-European with Semitic the pre-ablaut system is to be assumed. From this it would follow that the separation of Indo-European and Semitic took place at an earlier time than the separation of Indo-European and Ugrofinnic, and this would have the practical consequence that, while in Indo-European–Semitic language comparison the consonantism has rightly played the leading role, in the comparison of Indo-European with Ugrofinnic the leading role will fall to the vocalism. The first order of business is therefore to seek to fully determine the Ugrofinnic equivalents of the IE. short and long vowels and diphthongs through a sufficient number of credible etymologies. And this all the more, if one should fail in future as in the past to uncover truly characteristic consonant correspondences. Laws which only state that several sounds of one language family have fallen together in another language family are not of this sort, e.g. the laws of the Germanic sound shift as a characteristic example (SKÖLD's attempt to show a differing representation of IE. *d* and *dh* in Ugf. inlaut is unsuccessful).

3. With the grammatical evidence for relationship, it is actually better to assign form-words (pronouns, negations) to the grammar. There exists here a sum of equivalences that excludes chance and also — in spite of HEINRICH WINKLER and W. WUNDT — cannot be explained as universal human "lip and tongue gestures." With regard to the inflectional endings, I admit that I view the traditional comparison of the Ugrofinnic partitive with the IE. ablative as very doubtful, among other reasons because the age of the IE. nominal ablative (which as is well known occurs only in the *o*-stems and only in the singular) appears to me to be hardly settled. But nevertheless the agreement in nominal inflection appears to me to be very significant. In addition to the already long-emphasized common features, the ingenious interpretation of the Ugrofinnic (Uralic) genitive in *-n* by SKÖLD, FUF XVIII 226 ff., is to be noted. According to it the Uralic genitive in *-n* would be identical with the IE. locative in **-en* of some stems that do not have a nasal in the nom.–acc. (Sanskr. *ásthi* 'bone', loc. *asthán* in Vedic). The brilliant idea of the too-soon deceased researcher can be taken still further. As various other cases are formed from this *-en*-case (functioning as locative) in Indo-European, so other cases (essive, dative) are formed from the *-n*-case in Uralic. Furthermore the uses of the essive and the dative agree with the IE. instrumental and dative (cf. SETÄLÄ, Finska språkets satslära^2 § 54, § 50 V and for Indo-European e.g. BRUGMANN, Grundriss^2 II 2 pp. 528, 530, 537 ff., also Zs. f. celt. Philologie II 377 ff., 381), and the elements following *-n-* in the essive and dative strongly recall the Indo-European endings of the instrumental and dative: Finnish essive *-n-a*, Lappish dative *-n-i*, etc., SZINNYEI, Finnisch-ugr. Sprachw.^{2} pp. 55, 62; cf. Gr. instr. *ἅμ-α, πεδ-ά,* dat. *χαμ-αί,* IE. nom.–acc. **osth*(*i*) 'bone', loc. **osth-en*, instr. **osth-n-a*, dat. **osth-n-ai*. Hence there is naturally no need to accept the glottogonic interpretation in SKÖLD.

4. In comparing the verbal inflection of the two language families, there is a viewpoint to keep in mind that Rask had already emphasized, though in a different context. In his prize essay ("Undersögelse om det gamle Nordiske eller Islandske Sprogs Oprindelse" 1818), he observes p. 103 (= I 119 of the anticipated memorial edition, forthcoming) that the grammatical agreement between the Germanic and Ugrofinnic languages exists only in the personal pronouns and the verb endings arising from them. It is clear that Rask thereby regards the evidentiary value of the personal endings as lesser, because he counts on the possibility that they could have developed independently from the pronouns in each of the two language families, so that parallelism alone would have been involved (presumably he even regarded the parallel development as certain). The possibility of parallel development cannot be dismissed today either without further consideration; a more precise examination of the two systems of personal endings may therefore be useful.

5. It is immediately apparent that, whereas in Ugrofinnic the characteristic consonants of the personal endings and of the corresponding independent pronouns are identical (F. *elän* 'I live' with *-n* from *-m*, 2. sing. *elät*, plur. 1. *elämme*, 2. *elätte*, and *minä* 'I', *sinä* 'thou' with *s-* from *t-*, *me* 'we', *te* 'you'), in Indo-European no full agreement exists (personal endings *-m*, *-s*, *-me*, *-te*, but pronominal stems **me-*, **tu-* or **twe-*, 1. plur. with *w-* or word-initial *n-*, 2. plur. **ju-* or **w-*). This obviously presupposes a longer prehistory of the personal endings. The most remarkable particularity of Indo-European, though, is that it has multiple sets of personal endings. I leave out of account in this connection the difference between primary and secondary endings. The primary endings are mostly distinguished by an appended *-i* (Sanskr. *stṛ̥ṇ ā́-m-i* 'I scatter', 2. *stṛ̥ṇ ā́-s-i*, 3. *stṛ̥ṇ ā́-t-i,* plur. 3. *stṛ̥ṇ -ánt-i* beside imperf. *á-stṛ̥ṇ ā-m, á-stṛ̥ṇ ā-s, á-stṛ̥ṇ ā-t, á-stṛ̥ṇ -an(t)*; differently however 1. plur. *stṛ̥ṇ ī-má-s,* impf. *á-stṛ̥ṇ ī-ta*); this appended *-i* can originally have had nothing to do with marking the persons, but must have been a particle emphasizing present time, whose counterpart was the augment, which signified past time. But independently of the primary–secondary distinction there were in Indo-European three series of personal endings: (1) the (we say provisionally) "normal" endings, (2) the perfect endings, (3) the middle endings. The "normal" endings are best preserved in the athematic verbs (cf. the examples adduced above); in the verbal *-o-*stems (the "verbs in -ω") the "normal" endings are mixed with endings of different origin. The divergent endings of the *-o-*stems agree in part with the endings of the perfect (1. sing. **=ō* is distinguished from the perf. 1. sing. only by ablaut; 2. sing. **=ei* consists in the stem-ending *-e-* with the primary particle *-i*, wherein an actual personal ending is lacking). Furthermore it emerges from Hittite that the "perfect endings" could also appear in the present; cp. Jerzy Kuryłowicz, Symbolae grammaticae in honorem Ioannis Rozwadowski, I (Krakau 1927) p. 103. They must have served to express a relationship which, though especially frequent in the perfect, occurred not infrequently outside the perfect as well. The perfect was especially frequent intransitively (compare Gr. *πέποιθα, ἔρρωγα* to *πείθω, ῥήγνῡμι*, etc.), which is explained by the fact that it originally signified "the state of a subject arising from a preceding action" (see Delbrück in Brugmann's Grundriss^{1} IV p. 177, Brugmann, Grundriss^{2} II 3 p. 768). The "perfect" endings would thus have originally belonged to intransitive, the "normal" endings to transitive verbs.[3] A difference between the personal endings of intransitive and transitive verbs indicates that (as has long been suggested from another starting point) in Pre-Indo-European only the subject of intransitive verbs stood in the nominative, while the subject of transitive verbs stood in an oblique case, a situation well known from other languages (e.g. from Caucasian and Basque; cf. Avar *wacas boṣila ču* 'the brother bought a horse', in which *wacas* is the instrumental of *wac* 'brother'; see Zs. f. vergl. Sprachf. XL 150f.; for Basque I refer to H. SCHUCHARDT, Primitiae linguae Vasconum, p. viii, along with the examples appearing in the course of his presentation). This explanation of the two series of endings can be confirmed in at least some instances by analysis of the forms. To illustrate this, I present below the singular and plural forms of the two series (where the ending is fused with the stem-ending I use a double hyphen, where it is clearly distinct a single one):

	Intr.	Trans.	Examples	
Sing. 1.	*-a, =ō*	*-m(i)*	οἶδα, φέρω	τίθῑμι, ἐτίθην
2.	*-tha, =ei*	*-s(i)*	οἶσθα, Lith. *sukì*	ἐτίθης
3.	*-e*	*-t(i)*	οἶδε	*á-str̥ṇ āt*
Plur. 1.	*-me*	*-me(s)*	Sanskr. *vidmá*	*á-str̥ṇ īma*
2.	zero	*-te (-the)*	Sanskr. *vidá*	*á-str̥ṇ īta*
3.	*-r̥*	*-ent(i), -nt(i)*	Sanskr. *vidúr*	*á-str̥ṇ an(t)*

The "intransitive" ending of the 1. sing. thus recalls the initial sound of ἐγώ, the "transitive" ending the non-nominative cases of the pronouns. In the 2. sing. and plural of the intransitive series the actual personal ending appears to be entirely absent, while in the transitive series an ending (*-s*) is always present; the subject pronoun may also be absent (as in the imperative); the oblique case of the pronoun must on the contrary be expressed. In the intransitive 3. sing. the personal ending appears to be absent; for the *-e* of the perfect is difficult to interpret as a person marker; in the transitive series there appears an ending *-t*, which recalls the non-nominative pronominal stem **to-* (Gr. τόν, etc.). In the 3. plur. there appears in the intransitive series an ending *-r̥*, in the transitive series

---

[3] The characterization of the two series as transitive and intransitive, to be sure, leaves more to be said. The historically attested distribution of the present endings after the stem-ending (so that e.g. Gr. εἶμι and εἰμί have the "transitive" endings) must rest on a leveling that would hardly have been possible if previously apparent disturbances of the clear lines, from a particular point of view, had not been present. Indeed in Hittite the distribution of the two series does not follow the transitive–intransitive division at all.

-*nt*, which however does not fit with the pronouns remaining in historical times, but on the contrary recalls a well-known substantive paradigm (Lat. *femur*, *feminis*, Gr. ὕδωϱ, ὕδατος with -ατ- from -*n̥t*-). We will doubtless have to accept that there was a nominative pronoun whose most essential sound element was an *r*; one might seek to find the -*n*- (-*en*-) in the originally perhaps non-nominative demonstrative stem **eno*- (Sanskr. instr. *anḗna*).[4] In that case, however, the question arises how the -*t* of -*nt* is to be interpreted; if it was a plural sign (although no plural sign was added to the -*r*), it would recall the Ugrofinnic -*t*. In the 1. plur. no difference between the intransitive and transitive series is apparent; and the relationship between the intransitive -*tha* and the transitive -*s* in the 2. sing. is unclear.

6. I will only discuss the middle endings in a very summary manner (cf. on them Jerzy Kuryłowicz, Bull. Soc. Lingu. XXXIII 1–4, and Chr. S. Stang, Norsk tidsskrift f. sprogvidenskap VI 29–39). An entirely unitary formal principle of the middle endings does not exist; but the uses of the middle also differ in non-negligible ways (which of course does not rule out an original syntactic unity). A certain emphasis on the subject, its position of interest in relation to the action, its interest in the action is always present; but the verb can be marked either transitive or intransitive (λοέσσασθαι χϱόα 'to wash one's body', εἰωθὼς λούεσθαι ἐϋϱϱεῖος ποταμοῖο 'to bathe habitually in the well-flowing river'). In agreement with this emphasis on the subject, the middle differs from the active transitive or intransitive series in some instances by emphasis of the personal ending through ablaut (active: consonantal final; middle: consonantal final + -*o* or -*e*): 3. sing. act. -*t*, mid. -*to*, 3. plur. act. *-*r̥*, mid. *-*re* (the ending *-*re* is preserved in Sanskr. *á-duh-ra* 'they milked' and can also be inferred from various extended forms). When the active ending ends in a vowel, a consonant-including extension of the personal ending appears in the middle instead of emphasis through ablaut: 1. plur. *-*me-dha* and with the same *dh* 2. plur. *-*dh-we* (in which the actual person marker would thus be a vanished active *-*we*).[5] In a few instances the middle ending was identical to the active intransitive ending; however, quite likely their identity is not original, but arose in part through transfer of the active intransitive ending to the middle, in part conversely through transfer of the middle ending to the active intransitive series.

---

[4] It is however not entirely inconceivable that the verbal forms concerned should be interpreted very simply as substantive formations without an appended pronoun. "The sons sleep" would have been conceived of as "filii dormitores," which would be unremarkable; hardly logical, but perhaps not absolutely incredible would be the expression "filium per excitatores" for "they awaken the son" (not parallel to "I wake the son" = "filium excitat per me").

[5] There is an undeniable parallel between the formation of the middle forms and the formation of the primary forms from the active secondary endings. In both cases three methods are in use: (1) the consonant-final endings receive a vocalic extension; from -*t* are formed -*t-i* and -*t-o*; (2) the vowel-final endings receive a consonant-containing extension; from *-*me* are formed *-*me-s* and *-*me-dha*; (3) in the special case of the 2. plur., the rule applies that the differentiating consonantal element occurs not after the final vowel, but in combination with the nonsyllabic initial sound of the ending: *-*the* and *-*dh-we*. As the *dh* of *-*dh-we* is found in last place in the 1. plur., one would expect to find the *h* of *-*the* in last place in the 1. plur. as well. But here one finds -*s* instead. Did then *th* arise from *ht* in this instance and this from *st*? In other words, is the old view (Schleicher, Compendium pp. 143 ff.) that a voiceless aspirate can arise from a (vanished) *s* actually correct? There is in fact much to be said for it, and forms in which the presumed *s* of the primary ending of the 2. plur. (following a consonant) was able to vanish would

> It must for instance be supposed that the ending **-a* of the 1. sing. mid. (Sanskr. imperf. *á-duhi* 'I milked', optative *duhīyá*) comes from the active (Gr. οἶδα, Sanskrit *vēda* 'I know'); for in the middle an extended ending is expected. And conversely the ending **-e* of the 3. sing. act. (Gr. οἶδε) would come from the middle, as it is similar to **-to*, **-re* etc. (3. sing. perf. act. originally **woid*?). [I further suppose that the *-a* in Sanskr. *vēda* 'I know' and the *-i* in *á-duhi* go back to the same IE. sound as in pausa form and sandhi form respectively at an earlier date. The extremely sharp observations of Kuryłowicz, Symbolae Rozwadowski I 103, rest on a different view of the history of the sounds. This is not the place for a discussion of the difference in opinion.]

7. To this involved IE. system, which can moreover be suspected of having arisen from a still more involved (four-series?) system, is now opposed a much simpler system of personal endings in Ugrofinnic, which, as already noted, appears to be connected to the historically transmitted pronominal stems without any inconsistency, which would naturally be favorable to the supposition of a later date. And for a later date one might possibly also invoke two notable phenomena: the negative and objective conjugations of Ugrofinnic. On this subject the question also arises whether Samoyedic does not compel us to accept a very loose union of the personal endings with the verbal stem.

8. To exemplify the negative verb it will suffice here to cite the well-known Finnish forms:

en mene 'I do not go'	*mene-n* 'I go'
et mene 'thou dost not go'	*mene-t* 'thou goest'
emme mene 'we do not go'	*mene-mme* 'we go'
ette mene 'you do not go'	*mene-tte* 'you go'

It is certainly not surprising that theoretical language analysis may have felt unsure in regard to these peculiar forms. One has — naturally enough — been able to discover only a negation and a personal ending in the negative word and has therefore designated the form of the same as a negative pronoun (Rask, Udvalgte Afhandlinger I 116.17, 118.14, II 259–260). Simonyi, Die ungarische Sprache p. 402^2, speaks indeed of a "verb," but gives as literal translation 'I not-Ø go-, thou not-est go-, he not-s go-',[6] i.e. he offers in fact the same analysis as Rask. Ramstedt, MSFOu. LII 196, observes: "Expressions such as 'I not-Ø coming, thou not-est coming'[7] are not to be found within Indo-European"; in spite of his strong emphasis on the verbal character of the negative words, his remarks too are thus of no greater assistance to us. If the negative word really included only a negation and a subject marker, one could scarcely avoid taking the variable

---

sufficiently establish it. [The other manner of origin of the voiceless aspirates, established by de Saussure Publications scientifiques p. 603, cannot come into consideration for the ending **-the*.]

[6] [*Translator's note:* in German original, "ich nichte geh-, du nichtest geh-, er nichtet geh-."]

[7] [*Translator's note:* "ich nichte kommend, du nichtest kommend."]

position of the pronoun in *e-n mene* : *mene-n* as as an indication that the subject pronouns in Ugf. were not tightly fused with the verbal stem like for example the accusative and dative pronouns in Old Irish in instances such as *ni-m-thá* 'to me is not, I have not' : *tath-um* 'I have', so that one would have to speak not of personal endings but of enclitic pronouns. One could at most recall the fact that in Semitic the personal endings interchange with the personal prefixes, without being able to deny them the character of personal endings thereby; thus in Arabic (from *ḳatala* 'kills'):

2. sing. imperf.	*ta-ḳtulu*	perf	*ḳatal-ta*
1. plur.	*na-ḳtulu*		*ḳatal-nā*

One could also invoke the fact that Indo-European too has an alternation between verbal ending and verbal prefix (ἐ-τίθην : τίθημ-ι). But in the best of cases a view of the negative word as consisting of negation + pronoun would at least render more difficult the supposition of a historical relationship between the Indo-European and Ugrofinnic systems of personal endings.

However, a different interpretation of the Ugf. negative words is very surely the correct one: it contains an auxiliary verb. That construction with an auxiliary verb can occur for the negative is shown by English *I do not go*, *he does not go*. And that an auxiliary verb can shrink to a very small volume we infer e.g. from Polish, in which we find an *-m* and *-ś* as sole remnants of the verb 'to be' in *że-m pytał* 'that I asked', *że-ś pytał* 'that thou askedest'. It could however still raise doubts about the corresponding interpretation of the Ugf. negative words that subsequently only the single vowel *e-* remains for both the negation and the stem of the auxiliary word and that a verbal stem of the required form does not appear in Ugf. with a sufficiently abstract meaning (approximately 'to be').

Samoyedic, though, shows that such a verb existed in Uralic. Following Castrén, Gramm. d. sam. Sprachen, I cite: Yurak-Sam. *˜adm* 'I am', *˜a* 'he is',[8] *ńidm* 'I am not', *ńi* 'he is not' (p. 433, 435); Tavgi-Sam. *eit'um*, *eit'u* (root *e-*, cf. subj. *e-fām*, *e-fā*), negated *ńindem*, *ńinte*, subj. *ńi-feam* (p. 491 f.; on the extension in *eit'um* cf. p. 484); Yenisei-Sam. *a-rȯ*, *a*, subj. *airȯ*, imperative *ȧ*, negated *ńe-rȯ*, *ńe*, subj. *īrȯ*, imperative *i̇* (pp. 514 ff.); Ostyak-Sam. *e-ak* 'I am', *e-k* 'he is' (p. 542); Kamassian *i-gäm*, *i-gä*, imperative *i'*, negated *e-lem*, *e-l*, subj. *e-nem*, imperative *i'* (p. 576 ff.). The negated verb 'to be' has the same function as the Ugf. negative words: Yurak-Sam. *ńidm madaʼ* 'I do not cut (it)' etc., Castrén p. 380 § 482, p. 435.

There was thus a root *e-* 'to be' (or rather **ei-*, cf. Yurak-Sam. optative *ai-ra-wadm ˜ai-ra-wadm* etc.) which is eminently suited both by form and function to explain F. *e-n*, *e-t*, etc. Peculiar in this form though is the absence of the expected *n-* of the negation, a phenomenon which also seems to occur in

---

[8] By ˜ Castrén designates an η-sound, which he plausibly regards as a kind of vocalic infix; it corresponds to zero in Ugf. (examples can easily be found with the help of the index in Paasonen, Beitr. z. finnischugrisch-samojed. Lautgesch., pp. 332 ff.). On the phonetics cf. F. Äimä, Donum natalicium Schrijnen, p. 196.

Samoyedic. Two possible explanations present themselves. Either there was a variant form **e* (however it arose) beside the negation **ne* (cf. Hungar. *ne*), which must have entirely disappeared in contact with the verbal stem *e-*. Or F. *en*, *et* etc., Kamassian *e-lem* etc. have received the negative meaning in the same way as French *pas*, *personne*, *rien*, Old Norse *engi*, *eigi*, that is, by omission of the actual negation. However, the ellipsis of the negation or its phonetic absorption in the verb can only have been possible if a confusion of the positive and negative forms was ruled out by the syntax or by morphological differentiation. But a misunderstanding in the construction was already ruled out by the syntax, as the positive verb was not periphrastic; still more thoroughly was a misunderstanding ruled out if the positive verb 'to be' was unusual (as was the case in Ugf.). A misunderstanding was ruled out morphologically if (as in Kamassian) the positive verb 'to be' took a different extension than the negative form.

The negative conjugation thus does not in any way prove a looser connection of the personal endings in Ugrofinnic or in Uralic.

9. The objective conjugation, which appears in the Ugric languages and in Mordvin, consists as is well known in the merger of an object pronoun with the verbal form. The process in and of itself is unremarkable, and it also appears within Indo-European as a single linguistic phenomenon. Old Irish offers us the best example (see my Vergl. Gramm. d. kelt. Sprachen II 148 f.). However, in Old Irish the analysis of the verbal form fused with the object pronoun is always comparatively clear, and the object pronoun, as one would expect, follows the personal ending: *berth-i* 'he takes it'. There is only one exception: in the 3. plur. the plural ending is repeated after the pronoun: *bert-i-t* 'they take it'. Here one can observe a tendency to have the personal ending conclude the word extended by the merger; but the tendency has not fully achieved its goal, as the ending occurs twice. In the Ugric objective conjugation however it is a firm rule that the object comes before the personal ending. From this one might wish to conclude that, at the time of origin of the objective conjugation, the personal ending was still an independent subject pronoun, which did not always have to follow the verb immediately but could allow an object pronoun to come first. Thus SZINNYEI, Finnisch-ugrische Sprachw.^{1} p. 153. However, this conclusion is not compelling. The placement of the object pronoun before the personal ending could everywhere rest on analogical formation. For we may suppose the tendency to have the personal endings conclude the verbal form as the principal distinguishing mark of the verb, which we have observed in Old Irish, for Ugf. as well. And while in Irish this tendency was unable to achieve its goal, for lack of a suitable starting point, wherein the object pronoun immediately followed the verbal stem, in Ugf. the tendency had a much clearer path. For if there was a form in the verbal system which — in reality or appearance — had no personal ending, so that the enclitic object pronoun immediately followed the verbal stem, this form could have become the starting point for an analogical re-formation that introduced the same series order into other persons or even all of them. The 3. sing. was such a form. I therefore start out e.g. in explaining the Hungarian objective conjugation from forms such as *vár-ja* 'he awaits him'.[9] As *vár-ja* was felt to a certain extent as a conjugable stem, there were formed the 3. plur. *vár-já-k* 'they await him', 2. plur. *vár-já-tok* 'you await him', and 1. plur. *vár-j-uk* 'we await him'; and to a subsequently vanished 3. sing. **váro-l* 'he awaits thee' was formed the 1. sing. *vár-l-ak* 'I await thee', as the usual personal ending (or a subsequently not more common one) was everywhere allowed to stand after the object pronoun. A similar explanation would also be of assistance for the two other Ugric languages, and no evidence whatever for a late origin of the personal endings can be inferred from the objective conjugation.

10. But as is well known matters in Samoyedic are such that CASTRÉN, in the work that would suffice by itself to render his name imperishable in the history of linguistics, in his Samoyedic grammar, considered it necessary to treat the personal endings in the section on pronouns, as he placed them on a level with the enclitic pronominal forms attached to substantives (adjectives). However, we must immediately discount the at first glance overwhelming impression of the parallelism between noun + pronoun and verb + personal ending. The "conjugated" nouns contain as second element not an enclitic pronoun but the enclitic verb 'to be'. This analysis is self-evident from Yurak-Sam. *sawadm* 'I am good', *sawawa*ˀ 'we are good' etc. (*sawa* 'good' + *˜adm*, *˜awa*ˀ 'we are' etc.). The analysis is also obvious in Yenisei-Samoyed. In Tavgi-Samoyed the equivalent forms (*bārbam* 'I am lord', from *bārba* 'lord') are only obscured insofar as the verb 'to be' has acquired an extended form (*eit´um* 'I am') in its independent use. After this discounting there remains only the residual issue that the personal endings of CASTRÉN's 2d, 3d, and 4th series are phonically identical to the suffixed possessive pronouns. This identity, which moreover would rest in large part on mutual influence, indicates hardly more than the above-emphasized straightforward equivalence of the personal endings and the independent pronouns in Ugrofinnic.

So no evidence at all is present for a recent origin of the Uralic personal endings; Samoyedic cannot stand in the way of the potential acceptance of a historical connection with the IE. personal endings.

11. One could even ask whether it is not possible to turn the tables and claim the Samoyedic situation actually as an argument for such a connection. What could give rise to this question is the diversity of the personal endings present in Samoyedic, which in fact offers a certain (though quite possibly illusory) resemblance to the presumptive situation in Pre-Indo-European.

12. For Pre-Indo-European we have supposed an intransitive, a transitive, and a middle series of personal endings. In Samoyedic CASTRÉN's five series (2: with indefinite object; 1: with a definite object; 3: with dual object; 4: with plural object; 5: reflexive) can with some plausibility be traced back to three, which can be designated as the simple, objective, and reflexive conjugations.

---

[9] In this I agree with VILH. THOMSEN, Zur objektiven Konjugation des ungar. Verbums, Saml. afhandlinger II 298–302 (originally in Magyar Nyelvőr XL 1912). However, I reject his particular explanations, which had a certain influence on SZINNYEI; against them, I often agree with SZINNYEI[1]'s analyses, but in such a fashion that I ascribe an analogical origin to the formations analyzed.

> Series 3 and 4 clearly have an infixed object. An object pronoun fused with the verb is a priori also conceivable for 1, but not for 2; by way of comparison, Castrén's examples for 2 and 1, Yurak-Sam. *ńań mueu* 'I took bread' and *ńań muedm* 'I took the bread', would for example be formulated in Albanian as *mora bukë* (without object pronoun) and *e mora bukënë* (with bound object pronoun). Indeed it is also beyond doubt that traces of an object pronoun are present in 1, in part genuinely; so quite clearly in the 1. sing. Yurak-Sam. (from the verb 'to cut') *madā-d-m*, preterite *madā-da-m-ś*, in which *-d-*, *-da-* is an infixed object pronoun (to which corresponds in Yenisei-Samoyed *-ro-* in *mota-ro-* 'I cut'). It is strange, though, that the 3. sing. in 2 *madā-da* (with suffixed object pronoun) is formulated as *madā* in 1 (without object pronoun) (Yenisei-Sam. 2 *mota-ra*, 1 *mota*). This reversal of the expected distribution would arise from the influence of the possessive suffixes. The complete identity of the possessive suffixes appended to singular substantives and of the personal endings of series 2 would arise from the generalization of an earlier partial identity, in which the possessive suffix of the 3. sing. *-da* has drawn the verbal ending *-da*, actually belonging to series 1, to series 2. Against the grouping of series 1, 3, and 4 under the term "objective conjugation" it is not a serious objection that the personal endings of 3 and 4 (sing. 1. *-n*, 2. *-n*, 3. *-da*) differ from the endings of series 1 (sing. 1. *-dm*, 2. *-n*, 3. zero). For here too the possessive suffixes will have exercised an influence; the complete identity of the endings (object pronoun + personal ending) of 3 (*-hajun*, *-hajud*, *-hajuda*) with the endings (dual ending + pronoun) of the dual substantives furnished with possessive suffixes, and the exact agreement of the endings of 4 with the possessive suffixes found after plural substantives, will simply rest in large part on secondary leveling. [If the divergent forms of series 1, common to series 3 and 4 and the possessive suffixes, originally belonged to the possessive system, then indeed the question arises on what the difference between the possessive suffixes of singular and non-singular substantives rests. This question cannot be discussed in detail here. I only note that the difference in the 2. person consists in this, that the initial consonant of the pronoun is better preserved in the dual and plural than in the singular, which is perhaps to be explained by a more recent fusion. The 1. sing. *-n* could be remodeled after the 1. plur. *-naʼ*, and in the plural form one might see a last remnant of a pronominal stem corresponding to IE. **n-*, Sanskr. acc. dat. gen. *nas*, which would have prolonged its existence after non-singular substantives.]

But the triad of simple, objective, and reflexive conjugations thereby obtained in reality recalls the IE. triad only very imperfectly. A comparison is at all possible only for the simple and objective conjugations. Yet that the objective conjugation should have arisen from an earlier transitive conjugation without suffixed or infixed object pronouns is only a perhaps irrefutable but also unprovable hypothesis. And the simple conjugation (2) is not intransitive. Rather, the intransitive verbs have the endings of series 1 (*˜adm* 'I am'; cf. the examples in Castrén p. 207). Thereby it has been possible that in Kamassian, where there are only two series, series 1 has received intransitive but series 2 transitive meaning.

13. However, the assignment of the intransitive verbs to series 1 from the Samoyedic standpoint too is striking. So, in the hope that this stumbling block can somehow be removed, one could at least raise the question, whether a formal equivalence can be discovered between the Samoyedic series 2 and 1 and the Pre-Indo-European ones, designated as intransitive and transitive series, perhaps only with approximate correctness (cf. above, note 1) .

It is immediately apparent that the formal distinction between the two series which appears in Samoyedic must at least in part be very old. For in the 1. sing. there corresponds to the Yurak-Sam. *madāu* (2) and *madādm* (1) the Hungarian *váro-k* 'I await' (simple conjugation) and *várom* 'I await him' (objective conjugation).[10] And in the 2. sing. the Samoyedic forms of series 1 and the Hungarian forms of the objective conjugation presuppose the same starting point, an ending *-nt*: Ostyak-Sam. *ńoand* 'thou huntest', Yurak-Sam. *madān* 'thou cuttest', Yenisei-Sam. *motadd-o* id., Hung. *várod* 'thou awaitest him' (of course we lack here the Samoyedic equivalent of the Hungarian non-objective *vár-sz* 'thou awaitest'). The Hungarian objective conjugation is thus not an innovation, but rests on a system inherited from Uralic, which, however, has been partly rejuvenated by the above-mentioned analogical formation starting from *vár-ja*.

The distinction between Sam. *-u* (*-w*: *madāw-u* 'did I cut?', Castrén p. 439) and *-m* in the 1. sing. is now in any event independent of the infixed object pronoun *-d-* (*madā-d-m*), and there is no need to assume the former existence of this *-d-* for Hungarian. The Samoyedic *-w* (*-u*) can very simply be the weak grade of an *m*; and the corresponding explanation is also applicable to Hung. *váro-k*. Why the weak grade had to arise I admittedly do not know; but it can after all also be difficult enough to specify the reason for the weak grade of the possessive suffix 'my' (Yurak-Sam. *lamba* 'snowshoe', *lambau* 'my snowshoe'), in which *-u* must have arisen from *m*.

So it is best to resist the temptation to compare Sam. *-u* and *-m* with Gr. -ω and -μι (whereby one might also have to suppose that the ending corresponding to IE. *-ō* was subsequently influenced by the possessive suffix *-u*). The comparison is also implausible because nothing is found in the other persons that could be interpreted in this way.

We have thus found nothing of the Indo-European diversity of the personal endings in Uralic; the Uralic diversity does not appear to correspond to it. We have on the other hand also found nothing that would speak against the acceptance of a historical connection between the personal systems of the two language families.

Copenhagen

---

[10] The other Samoyedic dialects agree fairly closely with the Yurak-Samoyed system of personal endings, with divergences that are immediately clear. The most noteworthy is the divergence of Ostyak-Samoyed, where in series 2 the 1. sing. *ńoap* 'I hunted' appears, in series 1 *ńoak* (Castrén p. 534); here *-m* > *-p* is also transferred from 1 to 2 in individual dialects and conversely the ending of 2 to 1.

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

The Chinese primordial giant Pangu and his possible Indo-European origin

Václav Blažek
Masaryk University

In the present contribution a hypothetical relation between the Chinese primordial giant Pangu and his Indo-European counterparts is studied on the basis of both their mythic descriptions and etymological analysis.

1. *Pangu*

1.1. Documentation

Traditional: 盤古; Simplified: 盘古; Modern transcription in Pinyin: *Pángŭ*; Wade-Giles: *P'an ku*. Several reconstructions have been proposed for the historical pronunciation of the signs reflecting various stages in the development of Chinese:

盤 - Min dialects: Xiamen, Chaozhou *puã*, Fuzhou *puaŋ*, Jian'ou *puiŋ* (Starostin 1989, 66); Cantonese *p‘ūn*, ‘Ancient’ Chinese *꜀b‘uân* “vessel; tub, tray, dish, plate” (Karlgren 1923, 213) = Late Middle Chinese [AD 900] **pµuan* < Early Middle Chinese [AD 600] **ban* “basin, dish, tray, plate; to turn round; joy” (Pulleyblank 1991, 231) ~ Late Old Chinese [3rd cent. BC - 5th cent. AD] **bwân* “поднос, блюдо”, i.e. “tray, dish, bowl, pan, basin” < pre-Classical Old Chinese [11-8th cent. BC] **bān* (Starostin 1989, 143; 129: cf. the Siamese loan *bhān*). The external cognates confirm this reconstruction: Written Tibetan *ban* “beer-jug, pitcher”, *ben* “large pitcher, jug, beer-pot”, Jingpo *bàn* “tray, waiter, salver”, Burmese *panh-kan* “deep basin”, *laŋ-panh* “metal tray” (Starostin 1989, 143) < Sino-Tibetan **pān* ~ **bān* (CVST I, 51).

古 - Cantonese *ku*, ‘Ancient’ Chinese **‘kuo* “ancient; strange” (Karlgren 1923, 145) = Late Middle Chinese *kuə̆*’ < Early Middle Chinese **kɔ*’ “olden times, former times” (Pulleyblank 1991, 111) ~ Middle Chinese [7th-10th AD] *kó* < post-Classic Old Chinese [3rd-5th cent. AD] **kṓ* < East & West Han **kā́* [3rd cent. BC - 3rd cent. AD] = Early Classical Old Chinese **kā́* [5th-3rd cent. BC] < pre-Classical Old Chinese [8-11th cent. BC] *kā*’ (Starostin 1989, 272, 521, 687) = Archaic Chinese **kā*’ “antiquity, of old” (Schuessler 2007, 259). Baxter (1992, 845) quotes the reconstruction of Chén Dì *gù* < **kuX* “old, ancient”. Schuessler informs us that the word and its sign are already known from the oracle inscriptions on bones and bronzes from the Shang dynasty; it is also attested in the text *Shījīng* (*c.* 600 BC). He adds later readings as Late Han (1st-2nd cent. AD) *ka*, Old North West Chinese (*c.* AD 400) *ko*, Early Ming *ku*, Yuan *gu* [*ku*]. The external cognates confirm the Archaic Chinese reconstruction **kā*’: Written

Tibetan *rga-ba* "to be old, aged", Jingpo *ləga* "to be old, hardened, stiff" (Benedict 1972, #445; Schuessler 2007, 259) < Sino-Tibetan **kāH* (CVST V, 42).

1.2. Sources

The first secure source recording the myth of Pangu was the Daoist writer Xu Zheng (徐整) living AD 220-265, i.e. during the Three Kingdoms (三國) period. *Xú Zhěng* (Chinese: 徐整; Wade-Giles: *Hsü Cheng*) was an author of the "Three Five Historic Records" (Chinese: 三五歷紀; pinyin: *Sānwǔ Lìjì*, literally: "Three Five Calendar"). The numerals "3" & "5" refer to the "Three August Ones and Five Emperors" (三皇五帝).

1.3. Interpretation of the name

Paul Carus (1907[1974], quoted after <http://en.wikipedia.org/wiki/Pangu> offered the following explanation:

P'an Ku is written in two ways: one means in literal translations, "**basin ancient**", the other "**basin solid**". Both are homophones, i.e., they are pronounced the same way; and the former may be preferred as the original and correct spelling. Obviously the name means "**aboriginal abyss**" or in German, **Urgrund**, and we have reason to believe it to be a translation of the Babylonian Tiamat, "**the Deep**". But this explanation is rather problematic. The metaphor "basin, vessel" instead of "abyss" is not quite natural. The goddess *Tiamat* according to the Akkadian myth *Enuma eliš* was a personification of the primordial salt-water ocean. It is a common Semitic term: Akkadian *tiamtu(m)* "the deep, see"; Eblaite *ti-'a-ma-tum, ti-'à-ma-tum /tihām-at-um/*; Ugaritic m. *thm* "ocean; the Ocean", f. *thmt* "primordial ocean; abyss"; Hebrew *t^{e}hōm* "primaeval ocean, primaeval flood; flood, deluge" > Jewish Aramaic *t^{e}hōmā*, Syriac *t^{e}hōmā*, pl. *t^{e}hōmātā*; Arabic *Tihāmā* 'the coastal plain along the southwestern and southern shores of the Arabian Peninsula' (Koehler & Baumgartner 2001, 1690-91; del Olmo Lete & Sanmartín 2003, 864). It seems more probable that the Chinese compound represents an adaptation of a foreign theonym. There are significant details connecting the myth of Pangu with one of the most important Indo-European myths of the primordial giant, whose body served as a building material for both the heavens and earth and their inhabitants. Let us compare the brief description from Pangu's myth:

> His breath became the wind; his voice the thunder; left eye the sun and right eye the moon; his body became the mountains and extremes of the world; his blood formed rivers; his muscles the fertile lands; his facial hair the stars and milky way; his fur the bushes and forests; his bones the valuable minerals; his bone marrows sacred diamonds; his sweat fell as rain; and the fleas on his fur carried by the wind became the fish and animals throughout the land. <http://en.wikipedia.org/wiki/Pangu>

There are suggestive parallels in the so-called *Púruṣa*-hymn [RV X, 90]

> 13. *candrámā mánaso jātáś cákṣo sryo ajāyata*
>
> The Moon was gendered from his mind, and from his eye the Sun had birth,
> *múk^{h}ād índraś cāgníś ca prāṇā́d vāyúr ajāyata*
>
> Indra and Agni from his mouth were born, and Vāyu from his breath.
>
> 14. *nā́b^{h}yā āsīd antárikṣaṃ śīrṣṇó dyaú sám avartata*
>
> forth from his navel came mid-air; the sky was fashioned from his head,
> *padb^{h}yā́m b^{h}mir díśa śrótrāt tát^{h}ā lokā́m̐ akalpayan*
>
> Earth from his feet, and from his ear the regions. Thus they formed the worlds.

[Translated by Griffith 1889, 559-60]

A similar motif appears in the *Poetic Edda* in the description of cutting up the body of the primordial giant Ymir in portions:

Grímnismál

§40. *Ór Ymis holdi*	§ 40. Out of Ymir's flesh
var iǫrð um skǫpoð,	was fashioned the earth,
en ór sveita sær,	And the ocean out of his blood;
biǫrg ór beinom,	Of his bones the hills,
baðmr ór hári,	of his hair the trees,
en ór hausi himinn;	Of his skull the heavens high.
§41. *en ór hans brám*	§41. Mithgarth the gods
gørðo blíð regin	from his eyebrows made,
miðgarð manna sonom;	And set for the sons of men;
en ór hans heila	And out of his brain
vóro þau in harðmóðgo	the baleful clouds
ský ǫll of skǫpoð.	They made to move on high.

[Translated by Henry Adams Belows (1936)- see <http://www.sacred-texts.com/neu/poe/poe06.htm>]

Although the correspondences between the Chinese and Indo-European traditions are not one-to-one, they are so apparent that it is legitimate to think about a cultural influence. The first candidate could be the Old Indic civilization circle (Kulturkreis). The cultural vector directed from India to China brought Buddhism into China. But it is not very probable that the Buddhist missionaries propagated the Vedic deity. It is also impossible to explain the name *Pangu* from *Púruṣa-*. But there were two Indo-European branches which were in a direct contact with Chinese: Iranian and Tocharian. In this contribution both of these hypothetical mediators are discussed.

2. Etymological interpretation of *Púruṣa-*

To date there is no unambiguous etymology of ***Púruṣa-***. A survey of proposed etymologies was summarized by Mayrhofer (KEWA II, 312-13; III, 760; EWAI II, 149-50), cf. also Bailey 1979, 230. The present new etymology is based on two synonymous rhyme-words: *púruṣa-*, *pruṣa-* "man, male, human being, person", pl. "people, mankind" & *mánuṣa-* "man" (but also the athematic form *mánuṣ-* "man; Manu - father of men"), all attested already in RV. With regard to the forms *pūrú-* "man"(?) and *mánu-* "man, mankind; Manu - father of men" it is apparent that *-ṣ(a)-* is a derivational suffix. Brugmann (1906, 535) speculated about the primary abstract function of the nouns extended in *-ṣ-*, namely *mánuṣ-* *"Menschtum, Menschheit" (cf. the Avestan proper name *Manuš-čiθra-*). A key to the origin of this suffix could be found in the early Anatolian suffix *-hsu-* forming numerous personal names attested in the Old Assyrian tablets from Kültepe in Cappadocia. Analyzing the anthroponyms in their internal structure, it is possible to conclude that the primary function of the suffix *-hsu-* was "born". In this case the proper names can be interpreted as follows (see Laroche 1966, 297-303):

Apiziahsu- 'Latter-born' : *appezi-* "last(-born), backmost, hindmost",
Arawahsu 'Born as free' : *arawa-* "free",
Arzanahsu- 'Born in brothel' : *arzana-* "inn, hostel, brothel",
Nakiahsu 'Born as hard' : *nakki-* "hard, heavy",
Supiahsu 'Born as holy' : *suppi-* "pure, holy",
Udniahsu : *udne-* "country, land";

anthroponyms formed from toponyms:

Pesahsu 'Born in Pisa' : $^{\text{URU}}$*Pisa*;

or personal names formed from divine names:

Ilaliahsu 'Born by Ilali' : *Ilali*,
Peruahsu 'Born by Perua' : *Peru(a)*,
Taruhsu- 'Born by Taru' : *Taru*, i.e. the 'Storm-god'.

If the determination of the function of the suffix *-hsu-* is correct, it is possible to seek its origin in the primary appellative attested in Hittite *has(s)-* "to beget, procreate, engender, produce, bear, give birth, bring to birth", extended by the *-u-* with a passive function (Laroche 1966, 301 following Goetze; more problematic is the hypothesis of Hamp quoted also by Laroche, seeking here the verb **seuH-* "to give birth"). Puhvel (3, 245, 212-18) adds other Anatolian comparanda:

Hieroglyphic Luwian *has(a)-* "to beget", *hasmi-* "progeny, issue" = Milyan *qezm̃mi*?

In the light of the Anatolian anthroponyms it is possible to interpret the sigmatic designations of "man" in Vedic in two ways, (i) passive and (ii) active:

mánuṣ(a)- = (i) "born by *mánu-*" or (ii) "giving birth to *mánu-*", where
mánu- = "man; Manu"; cf. also epic *manuja-* "born by Manu" = "man" [MBh]
pruṣa- = (i) "born by *pūrú-*" or (ii) "giving birth to *pūrú-*", where *pūrú-* = "man"
púruṣa- = (i) "born by *púru-*" or (ii) "giving birth to *púru-*", where *púru-* has nothing common with men, but it means "many, much, abundant", cf. also *purú víśva* "one and all, every".

With respect to this analysis it seems there were two different terms:

pruṣa- = "born by *pūrú-*", where *pūrú-*[11] = "man", parallel to *mánuṣ(a)-* = "born by *mánu-*", where *mánu-* = "man"[12] or 'the first man Manu'
púruṣa- = "giving birth to many".

The interpretation "manifold, multiple" represents a truthful description of the primordial giant *Púruṣa-*, who is described as *sahásraśīrṣā púruṣa sahasrākṣá sahásrapāt* [RV X, 90.1.], i.e. "thousand-headed is Puruṣa, thousand-eyed, thousand-footed". With regard to his role in the process of creation, when his body was used as building material for many all objects, from the earth and heavens to animals and men, it is possible to use the epithet "multigenitor" or even "omnigenitor". The latter interpretation is explicitly expressed in RV X, 90.2: *púruṣa evédáṃ* ***sárvaṃ*** *yád b*^{h}*ūtáṃyác ca b*^{h}*áviyam* " This Puruṣa is **all** that yet hath been and **all** that is to be " [translated by Ralph Griffith].

---

[11] According to Kuiper (1991, 7) a tribal name of non-Aryan origin.

[12] This idea is based on the metaphor "man / human being" = "son of mankind", wide-spread in the ancient languages of the Near East (see Blažek 2008, 57-58): Sumerian DUMU.NAM.LÚ.ULÙ^{LU}, Akkadian *mār awīlūti* and *mār nišī* "man" in the sense "human being", lit. "son of mankind"; Ugaritic *bn nšm* "men", i.e. "sons of mankind", and the compound *bnš* "man, an individual, someone, person; people, personnel; service personnel; farmhand, labourer", pl. *bnšm*, cf. also *bnš bnšm* "every man", lit. "a man of men"; plus syllabic *bu-nu-šu* < **bun-nōš-*; similarly Hebrew *bɛn-'ĕnōš* (Ps. 144:3), Aramaic *bar 'ĕnāš*. Ugaritic *bn ảdm* "man" corresponds with Hebrew *bɛn-'adam* (Nu. 23, 19). Similar formations are also known in IE: Vedic *púmām̊s-*, nom. sg. *púmān*, voc. sg. *púmas* etc. "man", originally perhaps a compound "child of man", where the first component could (?) correspond with Greek παῖς "child", Gothic pl. *fawai* "few", Latin *paul(l)us* "little" etc., and the second component is connected with Vedic *mánu-* and / or Latin *mās*, gen. *maris*, *masculus* (Eichner 1974, 39-40; Čop 1976, 25-28). Similarly Slavic **člověkъ* "man, human being" is analyzable as German *Menschenkind* "human being", lit. "child of men or people" (Ivanov 1975, 20).

3. Tocharian data

Due to the Buddhistic conversion of the Tocharians no information on pre-Buddhistic deities is preserved in Tocharian texts. But the existence of the parallel creation myths in Germanic and Indo-Aryan traditions guarantees their common Indo-European origin. It implies their possible existence in other branches too, including Tocharian, before the spread of new religions. If there are no pre-Buddhistic theonyms in Tocharian texts, it is necessary to seek a hypothetical source of Chinese _Pangu_ among appellatives. With respect to the semantic analysis of _Púruṣa-_ as "multigenitor" or "omnigenitor" it is legitimate to seek in the semantic field "many, much, all". In Tocharian there are good candidates A _puk_, _pont/c/ś°_ and B _po_, _pont/c°_ "each, every, all"[13], derivable from the ablaut oppostion zero vs. _o_-grade and following levelling, which is comparable with the paradigm of Greek πᾶς, ntr. πᾶν, f. πᾶσα, Arcadian πάνσα, gen. sg. παντός, nom. pl. πάντες, acc. pl. πάντας, levelled from the primary opposition nom. sg. m. _*pónts_ : gen. sg. _patós_ < _*pō̆nts_ : _*pn̥tós_ (cf. van Brock 1972, 276; Hilmarsson 1986, 110, 214-15 added initial _*_H_1_-_ seeing here a participle from the verb _*_H_1_ep-_ "to take"; but in this case one would expect $^{+}$_epant°_ in Greek).

case	Tocharian A	Tocharian B	internal reconstruction
nom. sg. m.-f. nom.-obl. m.-f.	_puk_	_po_	_*pn̥kʷ(t)-s_[14] _*pō̆n(kʷ)t-s_
obl. sg. m.	_poñcäṃ_	= nom.	_*pn̥(kʷ)t-en-m̥_
obl. sg. f.	_pontsāṃ_	= nom.	_*pn̥(kʷ)t-i_H_2_-n- m̥_
nom. pl. m.	_poñś_^{ä}, _poṃś_, _poś_[15]	_poñc_	_*pn̥kʷ-es_ / _*pn̥(kʷ)t-es_
nom.-obl. pl. f.	_pont_	_ponta_	_pn̥(kʷ)t-_H_2
obl. pl. m.	_poñcäs_	_pontäṃ_	_*pn̥(kʷ)t-n̥s_
gen. pl. f.	_pontāśśi_	_pontäṃts_	_*pn̥(kʷ)t-_H_2_-n̥s-Tei_ _*pn̥(kʷ)t-_H_2_-n̥s-ōm_

---

[13] Tocharian A: Poucha 1955, 181-83: "omnis, cunctus, quisque". Tocharian B: Adams 1999, 402: "all, every, each, complete". Tocharian A & B: Pinault 2008, 522-24: sg. "totus", pl. "omnes"; he reconstructs _*pānt-_ < _*pe_H_2_-nt-_.

[14] Reconstruction of van Brock (1972, 272-73) and Schwartz (1992, 423). Otherwise Pinault (2008, 523) who separates the final _-k_ in A _puk_ and explains it as a secondary extension influenced by the word _māk_ (= B _māka_) "many; numerous". On the other hand, Hilmarsson (1986, 110) saw in _puk_ a suppletive base. In principle, it could be a continuant of the synonym _*bʰn̥ĝʰu-_.

[15] Tocharian ś has its origin in palatalized _*d_ and velars, not _*t_, changing into _c_ in the palatal context (Pinault 2008, 423). Tocharian A nom. pl. m. _poñś_^{ä}, _poṃś_, _poś_ reflects _*pn̥kʷ-es_ or _*pn̥kw-es_, parallelly the nom. sg. m. _puk_ is derivable from _*pn̥kʷ-s_ or _*pn̥kw-s_. It seems that the _t_-extension appears in other cases than the nominative. The reason could consist in suppletion, proposed already by Hilmarsson.

4. Iranian data

At least two literary Middle Iranian languages, namely Sogdian and Sakish, were in direct contact with Chinese. But in their known lexical corpora there are no promising candidates for both a counterpart of Vedic *Púruṣa-* and a source of Chinese *Pangu*[16]. In the remnant Iranian languages from Pamir and Hindukush there are more promising parallels: Wakhi *pak* "each, every(body)" (Paxalina 1975, 231; Steblin-Kamenskij 1999, 256), Bartangi *fuk* & *fúk-aθ* "every, all" (Sokolova 1960, 111-12; *-aθ* is an intensifier), Shughni *fuk* & *fuk-aθ*, Sarikoli *fyk* "all" (Tomaschek 1880, 818), maybe also Munjan *po*, pl. *pówi* id. (Paxalina 1983, 25, 202; Grjunberg 1972, 343), derivable from Iranian _*pak(u)-/*fak(u)-/*bak(u)-_ < _*p_$^{(h)}$_/b_$^{(h)}$_n̥k(u)-_ (see Paxalina 1983, 156-57, 173 about the phonological development). Their relation to Persian *pāk* "omnis, totus" and Ossetic Iron *fag*, Digor *fagæ* "enough, sufficient(ly)" (Abaev I, 416), implying the initial _*p-_, is not clear. An alternative cognate in Young Avestan *fą̊nku-*, attested in nom. pl. *fą̊nkauuō* "(mountain) peaks" [Yašt 19.3; see Bartholomae 1904, 973] would indicate the initial _*p_^{h}-. Bailey (1979, 190) connected the Avestan word with designations of various monsters, as Persian *nihang* "monster", Syriac *nhng-*' "crocodile" or "hippopotamus", Armenian *nhang* "water beast", reconstructing their Middle Iranian source in the form _*ni-fanka-_. According to him, Sanskrit *pra-pañca-* "expansion" [Kāvya; Kathāsaritsāgara, etc.], *pra-pañcaka-* "multiplying" [Harṣa carita] can also be related, but these words have been derived from *pañca* "five" (cf. EWAI III, 297).

5. **Other possible Indo-European cognates** (collected and discussed in Blažek 1999, 228-29)

Hittite *panku-* adj. "all, entire, complete; every; general", n. c. "multitude, the people, the masses; assembly", v. *pankuēšš-* "to become plentiful" (Kloekhorst 2008, 624-25; he connects it with Vedic *bahú-* "many, much, frequent, numerous" etc., from _*b_^{h}_n̥ĝ_^{h}_u-_); ?Cuneiform Luwian *pūna-* "all", perhaps via vowel metathesis or from _*Pn̥Kwo-_ > _*pn̥wa-_ > _*pwn̥(w)a-_.

Greek ἅπαξ "(only) once, once for all", if it was syncopated from *ἅπακυς < _*sm̥-pn̥k_^{w}_u-s_ "one-all" (Meyer 1993, 44-45).

Latin *cunctus* "all, whole" < _*kwonkto-_ < _*kwenkwto-_ < _*p_$_{e}$_nkwto-_ < _*pn̥Kwto-_ (Hamp 1973, 169-70); Umbrian nom.pl. *puntes*, abl.pl. *puntis*, referring to a group of priests, attested in the Iguvinian Tables (III.9,10/III.4), is usually translated "quiniones", but Polomé established perhaps a preferable meaning "all" or “the whole group” (1966, 233; 1968).

---

[16] A hypothetical compound of Khotanese *pana-* "each, every", pl. "all" (with Osset *fæjnæ* "every" have been derived from Iranian _*patina-_; see Bailey 1979, 209) and the derivative of the verb _*gau-_ "to grow" (> Khotanese *gvāna-* "growth", Young Avestan *gūnaoiti-* "verschafft" - see Bailey 1979, 96; Bartholomae 1904, 504) looks too artificial.

6. Conclusion

Middle and older Chinese transcriptions of foreign words, usually proper names, reflect the opposition between voiced and voiceless labials:

(i) ***b***

Middle Chinese 浮屠 *bi̯u-dou* = personal name/epithet *Buddha* (Pulleyblank 1962, 213)
Middle Chinese 梵 *bi̯am`* < **blāmh* = title *bramma* < *brahma* (Pulleyblank 1962, 114, 231)
Middle Chinese 蒲盧 *bou-lou* & 婆羅 *ba-la* = place name *Bālā* (Pulleyblank 1962, 214)
Middle Chinese 高附 *kau-bi̯ou`* = place name *Kabul*, Κάβουρα [Ptolemy, VI, 18.5] (Pulleyblank 1962, 223)

(ii) ***p***

Middle Chinese 邠祁 *pi̯in-na* < **plə̄n-na* = *Pūrṇa-* in personal name *Pūrṇamaitrāyaṇīputra-* (Pulleyblank 1962, 124)
Middle Chinese 賓頭盧 *pyin-du-lou* = place name *Piṇḍola* (Pulleyblank 1962, 214)
Middle Chinese 襆達 *puk-dat* < **phōk-ljāw* = place name *Puśkalāvatī-*, Πευκελαῶτις (Pulleyblank 1962, 101; Starostin 1989, 452)
Middle Chinese 虎魄 *hou´-phak* “amber” < **ha-phlak* < **hā-phrāk* = Greek *ἅρπαξ “amber” [recorded by Pliny] (Pulleyblank 1962, 124; Starostin 1989, 453).

These examples of Middle and earlier Chinese transcriptions are based on proper names and titles of Indo-Aryan and Iranian origin. If it is also possible to generalize them for adaptation of foreign words from other sources, the expected protoform in a hypothetical donor-language should look ± **bānkå*, if the adoption was realized in the 3rd cent. AD, *i.e.* at the time of the first attestation, or ±**bānkā*, if this process happened earlier. In the first case it is possible to think about Tocharian A *puk*, pl. *poñś*^{ä}, *poṃś*, *pośʼ* “all”, derivable from **b*^{h}*n̥ĝ*^{h}*w°*, perhaps via **bā*^{n}*kw°* with a loss of the nasal known e.g. from the Tocharian B verb *tsāk-* “to pierce, bite” (cf. van Brock *KZ* 85, 1971, 290). It is also necessary to accept that at least in the initial position the originally voiced aspirated labial still preserved its voice. From the point of historical phonetics of Tocharian this could be important information for the chronology of the process of devoicing. In Iranian the most promising is Young Avestan pl. *fā̊nkauuō* “(mountain) peaks” with hypothetical cognates in Middle Iranian **ni-fanka-* “monster” and / or in the word **p/f/bak(u)-* “each, every, all” in the minor languages from the Pamir-Hindukush borderland. Iranian prevocalic **f-* is an extremely rare phoneme. Its origin is more probable from **b*^{h}- than from **p*^{h}-, cf. Persian *faγfūr* “divine son” <

Iranian **baga-putra-* (Bailey 1936, 1054 = 1981, 302) or Gilaki *faγ / fiγ* "hornbeam" < Iranian **bāga-* < **bʰāgo-* "beech" (Henning (1963, 68-69, fn. 2). Both solutions remain so only on a hypothetical level.

Appendix: On the etymology of *Ymir*

The name of Ymir, the Scandinavian counterpart to *Púruṣa-*, has usually been projected in proto-Germanic as **Jumijaz*, derivable from **ym̥myo-*, and further compared with the Indo-Iranian first mortal and ruler of the dead **Yama-* whose name also meant "twin" (Puhvel 1975, 146-57). Although this solution is attractive and generally accepted, it has no etymological support in Germanic itself. The present alternative solution is based on both direct cognates in Germanic and external typological parallels. Gothic *iumjo* "crowd" (only in nom. pl. *iumjons managos* 'ὄχλοι πολλοί', i.e. "large crowds"), Old Swedish *ympnian* "abundant" (Lehmann 1986, 208), if related, locate *Ymir* in the same semantic field as *Púruṣa-*, whose name is derivable from *púru-* "many, much, abundant". Like *Púruṣa-*, *Ymir* was also characterized as he from whom all come, as recorded in The Prose Edda of Snorri Sturluson:

Gylfaginning "Beguiling of Gylfi"

§5.7.	§5.7.
Eru völur allar	All the witches
frá Viðolfi,	spring from Witolf,
vitkar allir	All the warlocks
frá Vilmeiði,	are of Willharm,
en seiðberendr	And the spell-singers
frá Svarthöfða,	spring from Swarthead;
jötnar ***allir***	**All** the ogres
frá Ymi komnir.	of Ymir come.
§5.8.	§5.8.
Ór Élivágum	Out of the Ice-waves
stukku eitrdropar	issued venom-drops,
ok óx, unz ór varð jötunn;	Waxing until a giant was;
þar órar ættir	Thence are our kindred
kómu ***allar*** *saman;*	come **all** together;
því er þat æ allt til atalt.	So it is they are savage forever.

[Text: <http://www.heimskringla.no/wiki/Gylfaginning>
Translated by Arthur Gilchrist Brodeur (1916):
<http://www.sacred-texts.com/neu/pre/pre04.htm>]

In this perspective the neglected comparison of Gothic *iumjo* and Hittite *hūmant-* "every, each, all, total, whole, entire" by Knobloch (Kratylos 4, 1959, 35), although rejected by Puhvel (3, 380-81), should be again taken in account.

Note: The sign 盤 *pán* < Middle Chinese *bân* < Old Chinese **bān* (see §1 above) was used in the Chinese word *shŭ-pán* "counting board, tally, abacus", whose Middle Chinese predecessor *ṣü-bân* together with *gōngju* "instrument" were adapted in the Tocharian B word *ṣipāṅkiñc* "abacus" (Lubotsky & Starostin

2003, 263).

Bibliography

Abaev, Vasilij I. 1959-73-78-89. *Istoriko-ėtimologičeskij slovaŕ osetinskogo jazyka*, I-IV. (Moskva-)Leningrad: Nauka.

Adams, Douglas Q. 1999. *A Dictionary of Tocharian B*. Rodopi: Amsterdam - Atlanta.

Bailey, Harold W. 1936[81]. Persia II: Language and dialects. In: *Encyclopaedia of Islam* III, 1050-58, reprinted H.W. Bailey's *Opera Minora. Articles on Iranian Studies*, Vol. I, ed. by M. Nawabi. Shiraz: Forozangah Publishers 1981, 299-307.

Bailey, Harold W. 1979. *Dictionary of Khotan Saka*. Cambridge: University Press.

Bartholomae, Christian. 1904[61]. *Altiranisches Wörterbuch*. Berlin: Walter de Gruyter.

Baxter, William H. 1992. *A Handbook of Old Chinese Phonology*. Berlin-New York: Mouton de Gruyter.

Benedict, Paul. 1972. *Sino-Tibetan: A Conspectus*. Cambridge: University Press.

Blažek, Václav. 1999. *Numerals*. Brno: Masarykova univerzita.

Blažek, Václav. 2008. Egyptian *rmṯ* "Man": An attempt at an Afroasiatic Etymology. In: *Semito-Hamitic Festschrift for A.B. Dolgopolsky and H. Jungraithmayr*. Berlin: Reimer, 57-62.

van Brock, Nadia, 1972: De πύξ à πᾶς. In: *Mélanges de linguistique et de philologie grecques offerts à P. Chantraine*, ed. A. Ernout. Paris: Klincksieck (Etudes et Commentaires 79), 263-276.

Carus, Paul. 1974. *Chinese Astrology: Early Chinese Occultism*. LaSalle (IL): Open Court Publishing Company, from an earlier book by the same author, *Chinese Thought* (Chicago: Open Court Publishing Company 1907), chapter on 'Chinese Occultism'.

CVST *A Comparative Vocabulary of Five Sino-Tibetan Languages*, I-VI, by Ilya Peiros & Sergei Starostin. Melbourne: University of Melbourne - Department of Linguistics and Applied Linguistics.

Čop, Bojan. 1976. Nochmals ai. *púmā̆ṅs-*. *Die Sprache* 22, 25-28.

Eichner, Heiner. 1974. Zu Etymologie und Flexion von vedisch *strī́* und *púmān*. *Die Sprache* 20, 26-42.

EWAI *Etymologisches Wörterbuch des Altindoarischen*, I-III, by Mayrhofer, Manfred. Heidelberg: Winter 1986f.

Griffith, Ralph T.H. 1889. *Hymns of the R̥gveda*. New Delhi: Munshiram Manoharlal.

Grjunberg, Aleksandr L. 1972. *Jazyki vostočnogo Gindukuša: mundžanskij jazyk*. Leningrad: Nauka.

Hamp, Eric P. 1973: On the phonology and morphology of Lat. *cunctus*. *American Journal of Philology* 94, p. 169-70.

Henning, W.B. 1963. The Kurdish elm. *Asia Major* 10, 68-72.

Hilmarsson, Jörundur. 1986. *Studies in Tocharian Phonology, Morphology and Etymology with special emphasis on the* o-*vocalism*. Reykjavík: Author.

Horowitz, Franklin E. 1992. On the Proto-Indo-European etymon for 'hand'. *Word* 43, 411-19.

Ivanov, Vjačeslav V. 1975. K tipologičeskomu analizu vnutrennoj formy praslav. **čelověkъ* 'čelovek'. *Ėtimologija* 1973, 17-22.

Karlgren, Bernhard. 1923. *Analytic Dictionary of Chinese and Sino-Japanese*. Paris: Geuthner.

KEWA *Kurzgefasstes etymologisches Wörterbuch des Altindischen*, I-IV, by Mayrhofer, Mannfred. Heidelberg: Winter 1956f.

Kloekhorst, Alwin. 2008. *Etymological Dictionary of the Hittite Inherited Lexicon*. Leiden-Boston: Brill.

Koehler, Ludwig & Baumgartner, Walter. 2001. *The Hebrew and Aramaic Lexicon of the Old Testament*. Leiden-Boston-Köln: Brill.

Kuiper, Franciscus B.J. 1991. *Aryans in the Rigveda*. Amsterdam-Atlanta: Rodopi.

Laroche, Emmanuel. 1966. *Les noms des Hittites*. Paris: Klincksieck.

Lehmann, Winfred P. 1986. *A Gothic Etymological Dictionary*. Leiden: Brill.

Lubotsky, Alexander & Starostin, Sergei. 2003. Turkic and Chinese loan words in Tocharian. In: *Language in Time and Space. A Festschrift for Werner Winter on the Occasion of his 80th Birthday*, ed. by Brigitte L.M. Bauer & Georges-Jean Pinault. Berlin - new York: Mouton de Gruyter, 257-269.

Meyer, Denise P. 1993. A Reexamination of Indo-European **pn̥Ku-* 'all, whole'. *IF* 98, 40-47.

del Olmo Lete & Sanmartín 2003. *A Dictionary of the Ugaritic Language*. Leiden-Boston: Brill.

Paxalina, Tat'jana N. 1983. *Issledovanie po sravnitel'no-istoricheskoj fonetike pamirskix jazykov*. Moskva: Nauka.

Pinault, Georges-Jean. 2008. *Chrestomathie tokharienne. Textes et grammaire*. Leuven-Paris: Peeters.

Polomé, Edgar. 1966. Les numéraux indo-européennes. *Revue belge de philologie et d'histoire* 44, 229-33.

Polomé, Edgar. 1968. The Indo-European numeral for 'five' and Hittite *panku-* 'all'. In: *Pratidānam. Fs. F.B.J. Kuiper*. Ed. J.C. Heesterman et al. The Hague-Paris: Mouton, 98- 101.

Poucha, Pavel. 1955. *Institutiones Linguae Tocharicae*, Pars I: *Thesaurus Linguae Tocharicae Dialecti A*. Praha: Státní pedagogické nakladatelství.

Puhvel, Jaan. 1975. Remus et Frater. *History of Religion* 15, 146-157.

Puhvel, Jaan. 1991. *Hittite Etymological Dictionary*, Vol. 3: *Words beginning with* H. Berlin-New York: Mouton de Gruyter.

Pulleyblank, Edwin G. 1962. The Consonant System of Old Chinese. *Asia Major* N.S. 9, 58-144, 206-265.

Pulleyblank, Edwin G. 1991. *Lexicon of Reconstructed Pronunciation in Early Middle Chinese, Late Middle Chinese, and Early Mandarin*. Vancouver: UBC Press.
Schuessler, Axel. 2007. *ABC Etymological Dictionary of Old Chinese*. Honolulu: University of Hawai'i Press.
Schwarz, Martin. 1992. On Proto-Indo-European **penkʷ*- 'hand'". Word 43, p. 421-27.
Sokolova, Valentina S. 1960. *Bartangskie teksty i slovaŕ*. Moskva-Leningrad: Izdatel'stvo Akademii nauk.
Starostin, S.A. 1989. *Rekonstrukcija drevnekitajskoj fonologičeskoj sistemy.* Moscow: Izdatel'stvo 'Nauka'.
Steblin-Kamenskij, Ivan M. 1999. *Ėtimologičeskij slovaŕ vaxanskogo jazyka.* Sankt- Peterburg: Peterburgskoe Vostokovedenie.
Tomaschek, Wilhelm. 1880. Centralasiatische Studien II.: Die Pamir-Dialekte. *Sitzungsberichte der philosophisch-historischen Classe der kaiserlichen Akademie der Wissenschaften* 96, 735-900.

The present study is one of the partial outputs of the Interdisciplinary Research project focused on old languages and older periods of modern languages (code 0021622435) at Masaryk University, Brno. It also originated thanks to the grant No. IAA901640805. I am very grateful to my colleague Michal Schwarz for his help with Chinese characters.

blazek@phil.muni.cz

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

Notes On Minoan Phonetics And Vocabulary

Sergej A. Jatsemirskij
Nizhny Novgorod, Russia

This brief article is based on the results of my recent studies of the pre-Indo-European Mediterranean languages. Many of the conclusions were presented in detail in the monograph *Opyt sravnitel'nogo opisanija minojskogo, etrusskogo i rodstvennykh im jazykov* [The comparative description of Minoan, Etruscan and languages related to them],[17] published in Russian in 2011 owing to the support from Ms. Peggy Duly (Benicia, California). Suggested lexemes and decisions are founded mainly on word-formational models; I found it logical to divide the paper into two parts – a discussion of the applicable phonetic issues and a pre-Greek glossary. Nizhny Novgorod, Russia, March, 2012.[18]

PHONETICS

VOCALISM

Judging by the repertoire of the symbols of linear writing known to us (see the table), there were 5 simple vowels in Minoan – *a*, *e*, *i*, *o*, *u*, and the specific features of the linear writing styles and Greek transfers can also aid us in making a preliminary conclusion about the presence of diphthongs as well.

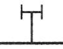
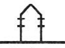
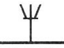
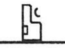
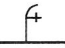
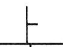
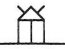
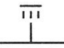
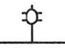
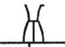
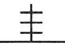
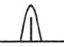
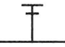
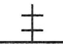
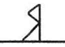
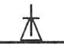
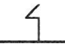
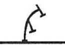
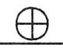
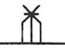
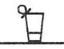
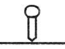
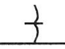
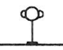
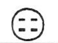
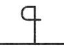
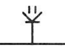
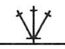
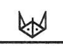
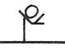
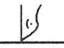
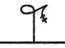
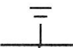
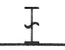
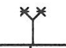
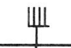
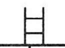
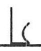
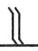
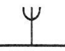
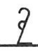
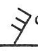
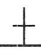
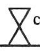
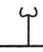
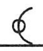
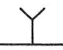
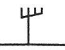
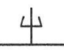
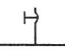
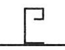
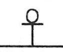
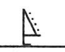
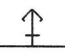
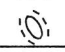
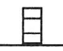
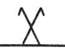
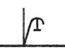
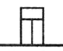
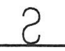
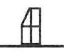
There is no need here to discuss the difference in Minoan of long and short vowels, since long vowels are very rare in the reliable Greek transfers[19] (κρώβυλος, Κυδωνία, σαγήνη, τήβεννα), while in other cases, the Minoan origin of substratum words may be questioned (ἦνοψ, μῶλυ, πώλυπος, χηραμός, etc.). It can be assumed that the lengthening for one reason or another already took place in Greek (cf. Πηνελόπα along with Πενελόπα, Ἀθηνᾶ with Ἴτανος).

---

[17] I assume that the languages of the Tyrrhenians and the inhabitants of Minoan Crete were genetically related. [The author clarifies this further: "My model of Tyrrhenian includes not only Aegean-Tyrrhenian (I use Lemnian only for the Stele inscription, but Ae-T for the borrowings and toponyms in other areas, including continental), but also Eteo-Cypriote (our scholar A.I. Kharsekin seems to be the first who talked about it in 70s). ... From my point of view, these languages were related to Nostratic." Ed.]

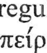
[18] Vitaly Shevoroshkin (pc.) adds: "What is especially important with Jatsemirskij's work, is that it seems to be the first serious attempt to represent Minoan as material which is quite possible to handle in a scholarly fashion, as we do it with Lycian and other languages (which we certainly understand, and which can be better understood, if we continue to seriously investigate it). So now scholars will have his stuff in English, at last, – and be able to continue serious work on it (if they decide to do so).

[19] "Transfer" refers to words transferred from the Minoan substratum to the Greek language [Ed.].

Linear *A* system[20]										
	a		**e**	**i**		**o**		**u**	
	008 		038 	028 		061 		010 	
d-	001 		045 	007 		014 		051 	
t-	059 	066 	004 	037 		005 		069 	131 cyp
p-	003 		072 = 301 	039 		011 		050 	
k-	077 		044 	061 		070 		081 	
q-	016 		078 	021 		032 		029 	
m-	080 		013 	073 		317 cyp		023 	
n-	006 		024 	030 		052 		055 	
r-	060 	076 	027 	053 	302  cyp	002 	318  cyp	026 	034[21] 
s-	031 		009 	041 		012 		058 	
z-	017 		074 	*vacat*		020 		079 	
j-	057 		046 	*vacat*		*vacat*		065 	
w-	054 		075 	040 		*vacat*		*vacat*	

---

[20] The mark (cyp) refers to the signs, the reading of which can theoretically be identified using the classical Cypriote syllabary; I also included some signs known only from Linear *B*.

[21] Judging by the economic inscription HT 116. The form *pi-034-te*, followed by the logogram *GRAnum* (, 120) and the number, corresponds in detail to the irregular in declension πείρινς (Gen. νθος), πείρινθος (Gen. ου) "Wagenkorb". The meaning of πείρινθος, "wicker basket", was explained by Hesychius: "πείρινθος· πλέγμα, τὸ ἐπὶ τῆς ἁμάξης". Accordingly, all the combination can be understood as "five baskets of grain".

Judging by the majority of Greek transfers, stress in the Minoan language fell on the root syllable.

The alternations of vowels are quite diverse, but it is not possible at present to make significant conclusions because of their disjunction. We can outline, for example, the alternations *a – o* (σκάλοψ, but σκόλοψ, σκολόπαξ), *e – i* (δέπας along with Mycenaean *di-pa-*, probably, σέσυφος : Σίσυφος) and some others.

The most typical is the alternation of *u – i*, already noted by M. Ventris and J. Chadwick and reflected in a variety of Greek transfers (Αἴσυμνος : αἴσιμος, μύλλον, μύρος, but LA, LB 073 𐀖 *mi*, τόρδυλον : τόρδιλον; cf. below the suffix -υρ- and other common suffixes), but here, in fact, a glide is reflected. The desire to avoid the discordant alternative vowel υ-υ led to the emergence of parallel spellings: μιστύλη and μυστίλη, Σύρινθος and Σίρυνθος. The author of this study tends to assume that this phenomenon could even be the substrate for the Greek language, where in ancient times **u* transformed into a narrow *υ*, and in the medieval and modern language it finally merged with ι. By analogy with the facts of the Tyrrhenian languages of the 1st millennium BCE we can assume that these alternations did not have any grammatical function.

There is also a type of alternation which can be called regular. We should note two roots, *γαλ- (for plant names) and *μαρ- "thread, cord". In its pure type *γαλ- appears in ἄγλις "clove" (with metathesis), and there is also a suffixal form – γάλινθος – a kind of peas (Hesychius); *μαρ- is found in Doric μαρύομαι "to bind", and with the same suffix – in μήρινθος "thread, cord". It is essential to note that both roots are presented in the forms γέλγις (Gen. -ιθος) "clove" and μέρμις (also with gen. -ιθος) "belt"; we can conclude that partial reduplication of the root consonant caused the change α > ε. It also leads us to think that some other words with ιθος-Genitive (including ὄρνις) date from Minoan, too.

One cannot speak of diphthongs with a high degree of certainty. Indeed, combinations such as *a-e*, *a-u*, *e-u*, *o-u* occur at the juncture of syllables in Linear *A* inscriptions, but to prove a diphthongal nature of such combinations is hardly possible. There are reliable Greek transfers, but they are very few in number (for example, the toponyms Αἴσυμνος, Αἰσύμη with Etruscan *ais* “god”; *aisuna* “sacrificial offering”); in most cases we are dealing with diphthongization, which occurred already in Greek: πείρινς, πείρινθος with *pi-ri*$_2$(*n*)-*te* (HT 116), Σειληνός with Σιληνός, perhaps also οἴκυλος. The diphthong *au* was supposed to exist in Minoan, but in the most reliable transfers it is tightened (Λίκυμνα along with *λαυκ- “to reign”, Etruscan *lauχumneti* “in the royal (palace)”, Κυδωνία along with *ka-u-do-ni*, *ka-u-de-ta*); probably the phenomenon itself goes back to Minoan (see the variant *ku-do-ni*).

CONSONANTISM

As can be seen from the repertoire of well-known Linear *A* and Linear *B*[22] characters, in the language of Crete there are 9 basic consonant phonemes – *p*, *t*, *d*, *k*, *m*, *n*, *r*, *s*, *z* and 2 semi-vowel phonemes – *j* and *w*. Some syllables that begin with *p*-, *t*- and *r*-, coinciding in the provisional Mycenaeanological reading, may be indicated by different signs. There is no doubt that they contained different phonemes in the Minoan language; as far as the Greeks are concerned, this distinction lost its meaning for them. In addition, there were a number of labialized consonants. We know four syllables *qV*- (in Linear *B* also 032 *qo*) from Linear *A*, and from Linear *B* also we know signs for *dwe* (071), *dwo* (090), *twe* (087), *two* (091) and *nwa* (048, the image of crossed hands, that has something in common with 052 *no*). Consequently, *q* shifted to *b* (cf. in Pausanias Βελεμίνα and *qe-de-mi-nu* in the inscription MA 1; we should probably also include here βασιλεύς “king” – cf. Mycenaean *qa-si-re-u*), it may be also *p*; as for the destiny of the other labialized elements, it is obscure.

It is well known that in the linear writing system there was no contrast between the voiced, voiceless and aspirate consonants, and the Greeks, who did not introduce new syllabograms into the writing, retained this system, although it did not fit Greek with its fundamental difference of these three series. However, one should not think that Minoan had no series of consonants which were opposed to one another, though, they were designated in the same way in the writing, since in Greek transfers of Cretan words the aspirates and voiced are scarcely less common than the simple voiceless.

---

[22] See the Table.

Based on the Tyrrhenian material, described in detail in our monograph, we conclude that in the Tyrrhenian languages of the 1st millennium BCE there were two series of consonants which can be provisionally called "strong" and "weak". Over time, the first found a tendency to turn into aspirates (in the texts and loanwords), and the second – into voiced (in loanwords). Assuming that the Minoan language was akin to the Tyrrhenian, we believe it is possible to preliminarily extend the Tyrrhenian scheme to Minoan.

The only exception (externally) is a set of syllabic signs with the initial *d-*, which the Greeks used regularly for their native δ. With regard to the language of Crete, one should talk about a special phoneme, which is viewed through two series of alternations. On the one hand, we know that the Greeks used syllables of *rV-* type to designate their original λ, signs which were absent in the linear script (*do-e-ro* = δοῦλος); however, along with it in a number of words the writing of δ- corresponds to the reading of λ, the most striking example being the Cretan word λαβύρινθος – cf. *da-pu-ri-to-*. Thus it is possible that in Minoan there was a particular phoneme intermediate between *d* and *l*, which is characteristic of the various languages[23]; for their native λ the Greeks never used *d-*.

No alterations of Cretan *m-*, *n-* and their Greek reflections were attested in the system of sonants, except in cases of nasal weakening before the next consonant (for example, the suffix -υμβ- can take the form of -υβ-); as for the situation with *r-*, it is somewhat more complicated. First, it is certain that some of the signs (due to ra_2, ra_3, ro_2, ri_2) hide very special phonemes, and secondly, in the Tyrrhenian languages of the 1st millennium BCE *r* and *l* are never mixed (in fact, one cannot assume that **R* was once a single phoneme which differentiated into two distinct phonemes). We tend to think that in the language of Crete there were phonemes *r* and *l*, but they did not differ in writing to express the force of the features of pronunciation; perhaps they also could be perceived as "strong" and "weak", the distinction between which was not made. Their closeness in pronunciation also influenced the later Greek dialect of Crete (cf. in Hesychius "λάκη· ράκη. Κρῆτες").

---

[23] Cf. in dialectal/archaic Latin: *dingua – lingua, odor – olere, sedeo – solium, con-silium, dacruma – lacrima* (with Greek δάκρυ); and ʼΟδυσσεύς – ʼΟλυσσεύς, whence Latin *Ulixes*, et al.; also the evolution of *d* > *l* is a distinctive characteristic of the Eastern Iranian languages, etc.

The features of the reflection of Cretan *z* in Greek are unclear, *w* is restored indirectly because of the disappearance of the *digamma*, *s* is reflected on a regular basis (there is also a parasitic variant – cf., for example, σμήρινθος – μήρινθος along with Greek σμικρός – μικρός, στέγος – τέγος).

As for the semi-vowel *j*, it could turn into ζ, at least in some cases. Thus, we know the root of plant names ζιζ-, with reliable Cretan suffixes: cf. forms ζιζουλά "millet", ζιζάνιον "darnek", ζίζυφον "*Rhamnus jujuba*" – in the Latin language the last substratum word is preserved as *jujuba.* Also, Cretan mediation can explain a phonetic appearance considered to be borrowed from the Egyptian word ζῦθος "beer" [Ernschtedt, 1953, p. 27] – from the Egyptian name for barley *jt*, Coptic ⲉⲓⲟⲩⲧ, ⲉⲓⲱⲧ.

It seems that in Minoan there were also several affricates, which in Greek transfers exist as groups ρ + consonant. The combination of ρδ occurs more often than others in the examples so far found (see the widespread stem καρδ-, κορδύλος "newt", πέρδιξ "partridge", the gloss of Dioscorides τόρδυλον / τόρδιλον "*Seseli* sive *Tordylium officinale*", and some suffixed derivatives – the glosses of Hesychius κικίρδης "fig" and the name of the fish σαπέρδης); there are also groups ρσ(the Cretan gloss of Hesychius γάρσανον "brushwood", κόρσεον "tuber of water lotus", the names Περσεύς, Περσεφόνη (Περσέφασσα, Φερσέφασσα), the name of the tree περσέα) and ργ (γόργυρα "dungeon, prison", σαργάνη "cord", σαργός – a species of fish); some other options are also not ruled out (for example, παρθένος).

In the monuments containing syllabic writing these special sounds were reflected in different ways: if in Linear *A*, they seem to have always been reproduced through the signs of *rV* type in our provisional reading (*ka-ro-pa*$_3$ in the plate HT 31 with Greek κάρδοπος "trough"), in Linear *B* the affricate "unfolded", and *r* was omitted as a general rule for the sonants before a consonant (*ka-da-mi-ja* along with κάρδαμον).

A special pronunciation, which goes back to the supposed affricates, remained in Crete until later times – the gloss of Hesychius ("πέρδιξ· πῆριξ. Κρῆτες") shows that the "group" ρδ is implemented as one sound. Apparently a kind of faintly quavering continuant sound,[24] under the influence of the Cretan substratum, occurred in native Greek words as well – see again in Hesychius τρέ ("σέ. Κρῆτες") instead of the expected Doric τέ.

VOCABULARY[25]

A

ἄβαξ "abacus, calculating board" [-ακ-].

ἀγγ-: ἄγγος – different kinds of vessels; "basket"; "trunk" ["Mittelmeerwort", Frisk]; ἀγγύλη [Eudem.] – kind of missile weapon; ἄγγυρα [Hes.] "vine"; ἄγγυρος [Hes.] – kind of cookie [-υ/ιρ/λ-[26]].

ἄγλις see γέλγις.

ἀγόρ "eagle" [Hes. "ἀετός. Κύπριοι"; Etruscan-Latin *aquila*, *Aquilo*].

ἀερ-: 'Αέροπες [Hes.] – ethnos in Argolis; bird species; 'Αερόπη – Minos' granddaughter; ἀερόπος [Hes.] – kind of mollusc [-οπ-].

'Αθηνᾶ see ταν-.

---

[24] This elusive sound was discussed by the author and editor. The relationship between a rhotic+coronal cluster (ρδ) and a simple rhotic (ρ) reminds me of the development (in large parts of Norway and Sweden) of the Old Scandinavian cluster /rð/, as in *orð* 'word', to what is traditionally called the "thick *l*," conventionally written /ɫ̣/ and sounding like the typical American or Irish /r/ as in 'four', but flapped (IPA /ɽ/). "Thick *l*" is also a conditioned positional reflex of old **l*, thus in some dialects *borð* 'table' and *ból* 'dwelling, lair' have .[.merged as **/bo:ɫ̣/** [Ed

[25] In brackets (for example, [-νθ-]) I put the indications (mostly word-formational), which make me .understand these words as Minoan

[26] .Below -υρ- for simplicity

αἰγυπιός (?) “kite” [-υπ-?].

αἰσ-: αἴσακος “stalk of laurel” (plant, devoted to gods) [-ακ-]; αἰσιμία “happiness”; αἴσιμος “fatal”; “just”; αἰσυμνάω “to rule”, “to reign”; Αἴσυμνος, Αἰσύμη – different toponyms [Etruscan *ais* “god”; “god”, *aisuna* “sacrifice” (> Umbrian *esono*); -υμ(-να)].

ἀκαλ/ρ-: ἀκακαλλίς – flower of narcissus [Hes. “ἄνθος ναρκίσσου. Κρῆτες”; Red.]; ᾿Ακάλλη [Apollod.] – Minos’ daughter; ἄκαρα “leg”; “thigh” [Hes. “τὰ σκέλη. Κρῆτες”]. Cf. καρ- (?).

ἀκανθ- “sloe”: ἄκανθα “thorn”; ἀκανθίας “shark”; ἀκανθίς “goldfinch, *Carduelis carduelis L.*”; ἀκανθίων “hedgehog” [-νθ-]; ἀκανθυλλίς – bird species [-νθ-υρ-].

ἀκαρν-: ἀκάρναξ [Hes.] “grouper, *Labrax lupus* sive *Sebastes marinus*” [-ακ-]; ἀχάρνας “*Anarrhichas lupus* sive *rufus* (?)”; ἀχαρνώς “perch (?)” [-αρ-να?]. Cf. ᾿Ακαρνανία “*Acarnania*”.

ἄκορον see κορ-1.

ἀκτέα “elder, elder-berry, *Sambucus nigra*” [-ε/ι+GI[27]].

ἄκυλος, ἀκύλος, ἄχυλος “edible acorn” [-υρ-]. Cf. ᾿Ακύφας (?) [-υφ-].

᾿Ακύφας [Steph.] – Doric town [-υφ-]. Cf. ἄκυλος (?).

ἄλαρα [EtM, Hes.], ἐλάραι [Herod.] “spike”, “point” [KN Zf 31 *a-da-ra* (silver woman’s hairpin)].

ἀλένθη [Hes.] “night” [-νθ-].

᾿Αλίκυρνα [Steph.] – Acarnanian area [-υρ-να]. Cf. ῾Αλικαρνασ(σ)ός (?).

ἄλλιξ (?) [Hes.] “chlamys” [-υκ-].

ἀμ-1: ἁμάδεα (Acc. Pl.) – kind of fig [Athen. “῾Ερμῶναξ δ' ἐν Γλώτταις Κρητικαῖς σύκων γένη ἀναγράφει ἁμάδεα καὶ νικύλεα”; -ε/ι+GI]; ἄμυλος “pie (of fine-ground flour)”; ῎Αμυρος – Thessalian river [-υρ-]; ῎Αμυμνοι – unknown tribe; ᾿Αμυμώνη – Danaid [-υμ-να]; poss. ἀμύγδαλον “almond, *Amygdalus*” [“Fremdwort unbekannten Ursprungs”, Frisk; -αρ-?].

---

[27] Greek inflexion.

ἀμ-2: ἀμία – tunny [tuna] species [-ε/ι+GI; < Egypt. *mehí*?]; ἀμύς (Gen. -ύδος) [Gal.] “fresh-water turtle”.

ἀμαρ- (ἀμ1-αρ-?): ἀμαρυλλίς “*Amaryllis*” [-υρ-]; Ἀμάρυνθος – town in Euboea [-νθ-].

Ἀμνισός (?) – Cretan river and city [Mycenaean *A-mi-ni-so*].

ἄμπελος “grapes”; “vine (plant)” [Etruscan gloss TLE 805 *Ampiles* “May” (usual time for the engrafting of grape vines [Geopon., V, 1])].

ἄναξ (Ϝ-, Mycenaean *wa-na-ka*) “lord” [-ακ-].

ἄνθραξ “coal” [-ακ-].

Ἄπταρα [Hes.], Ἄπτερα – Cretan city [Mycenaean *A-pa-ta-wa*].

ἄρακις “cup” [KO Zf 2 (inscribed bronze cup): *a-ra-ko-*. Cf. Athen. “Αἰολεῖς δὲ τὴν φιάλην ἄρακιν καλοῦσι”; Hes. “ἄρακιν φιάλην, καὶ ἀράκτην”].

Ἀράκυνθος – mountain in Boeotia [Etruscan gloss TLE 810 ἄρακος “falcon; hawk”; -νθ-].

Ἀργάνθον – mountain in Mysia (Latin *Moesia*); Ἀργανθώνη – personal name[28] [Etruscan; -νθ-; -να (?)].

Ἀρίνθη [Hecat., Steph.] – town of *Oenotri* [-νθ-].

ἄρμυλα “sandal; (high)boot” [Hes. “ὑποδήματα. Κύπριοι”; -υρ-].

ἀρτ-: ἄρτος “bread”; ἄρταμος “cook”; “butcher” [-αμ-]; cf. Ἄρτεμις, Doric Ἄρταμις (?).

ἀσάμινθος “tub, bath” [-νθ-].

ἄσκυρον “St. John’s wort, *Hypericum*” [-υρ-].

ἀσπάλαξ “mole” [-ακ-].

ἀστ-(?) (Ϝαστ-; Boeot. Ϝάστιος etc.): ἄστυ “city (mainly capital)”; Ἄστυρα – settlement in Mysia [-υρ-].

ἀστακός “lobster, *Homarus* sive *Astacus marinus*” [-ακ-].

ἀσύφη [Diosc.] “*Cassia*” [-υφ-].

ἀτάλυμνος [Nicander] “plum; plum tree, *Prunus L.*” [-υμ-να].

Ἄταρνα see ταρ-.

---

[28] PN below.

ἀχαρν- see ἀκαρν-.

ἄχνυλα “hazel, hazelgrove” [Hes. “καρύα. Κρῆτες”; -υρ-].

ἀψίνθιον “wormwood, *Artemisia absinthium*”; Ἄψυνθος – city in Thrace [-νθ-]. Cf. Ἄψυρτος (?) – Medea’s brother.

B

βαθανία “nest” [Hes. “νεοσσείαν. Κρῆτες”; -να?].

βαίτυλος [Hes.] “stone, swallowed by Cronus (instead of Zeus)” [-υρ-].

βαλ-: βάλαγρος; βάλερος; βαλίνος [-να]; βαλλιρός [-υρ-] – species of fresh-water fish (carp, *Cyprinus*?). Cf. *Βάλινθος?

*Βάλινθος (Προβάλινθος, with Greek προ-) – Attic town [-νθ-]. Cf. βαλ-?

βάλσαμον (> Hebrew *bāśām*) “*Balsamum gileadense*” [-αμ-].

βασιλεύς (?) “king” [Mycenaean *qa-si-re-u*].

βασσάρα “fox” [-αρ-; “ohne Etimologie”, Frisk]

βασύνιας [Semus, Fr., 3] “sacrificial donation to Hecate in Delos” [Etruscan *pesna* – CIE 252 etc.; -να).

βάτος “blackberry; sloe” [“Mittelmeerwort”, Frisk].

βατύλη [Sch. Arph.] “woman” [-υρ-].

Βελεμίνα [Paus.] – Laconic toponym [MA 1 *qe-de-mi-nu*, **q > b*, **D > l*; -να (-μι-να?)].

βῆραξ [Hes.] (βαρ-, παρ-) – kind of bread [-ακ-].

βήρυλλος “beryl” [-υρ-].

Βισάνθη – Macedonian city [-νθ-].

βόλινθος “wild bull” [-νθ-].

βόμβυξ “silkworm, *Bombyx*” [-υκ-].

βότρυς “bunch of grapes” [Unbefriedigende idg. Etymologien, Frisk].

βουκανῆ “narcissus” [Hes. “ἀνεμώνη τὸ ἄνθος. Κύπριοι”; -να].

βράβυλον “sloe” [-υρ-].

βρέτας “wooden statue, idol” [“Mittelmeerwort ohne Etymologie”, Frisk].

Γ

γαθύλλις, γηθύλλις "onion" [-υρ-]. Cf. γηθύον, γήτειον.

γαλ-: ἄγλις, γέλγις "clove" [-θ-; Red.]; γάλινθος (see. ἐρέβινθος).

γαλλ- see γαρ-.

γαρ-: γάρος "fish soup; caviar"; γαλεός "spotted shark"; γαλλαρίας [Athen.], καλλαρίας [Hes.] – fish species [-αρ-]; Γαλήνη – Nereid [-να].

γάρσανον "brushwood" [Hes. "φρύγανα. Κρῆτες"; -να?].

Γέλχανος see ἐλ-.

γογγ- "round" (?): γόγγρος "eel"; γογγύλη "turnip" [-υρ-]. Cf. γογγών [Hes.] "foolish" [-να] (?).

γόργυρα "cave, dungeon" [-υρ-].

γορδ/τ- (< Hittite *gurta-*) "city" (Mycenaean *ko-tu*): Γορδιας (Thessaly, legend on coin); Γόρτυν (Crete), Γόρτυς (Arcadia), Γορτυνία, Γορδυνία (Macedonia), Γυρτών (Thessaly); Hes. "Κορτύνιοι· οἱ 'Αρκάδες· ἡ γὰρ Κόρτυς τῆς 'Αρκαδίας"; Κυρτώνη (Steph., Boeotia); Etruscan *curtun* > Latin, Italian *Cortona*; Hes. Καρτεμνίδες ("οἱ Γορτύνιοι. Κρῆτες") [-μ-να].

γραψαῖος [Athen.] "crab" ["Mittelmeerwort", Frisk].

Δ

δαγύς (?)"waxen puppet" (intended for witchcraft) ["Technisches Fremdwort ohne Etymologie", Frisk].

δάκτυλος "date (fruit)" [-υρ-].

δαμ-: Δαμυρίας – river in Sicily; Δαμύλος [Lucian.] PN [-υρ-]; Ῥαδάμανθυς – Minos' brother [KY Za 2 *da-ma-te*; AR Zf 1 *no-da-ma-te*; -νθ-].

δάσκιλλος – kingfish; meadow-wort (*Sciaena*?) [-υρ-].

δάφνη "laurel, *Laurus nobilis*" [-να; "unerklärtes Mittelmeerwort", Frisk].

δελκανός [Athen.] – fish species [-να].

δέλφαξ "sow" [-ακ-].

δεπ-: δέπας “cup, bowl, goblet” (Mycenaean *di-pa*); λεπάς – mollusc species; δέπαστρον “cup”; λεπαστή “cup (looking like shell)” > Latin *lepesta, lepista*)”; λέπαστρον [Hes.] “kind of fishing tacking” [“Mittelmeerwort ohne Etymologie”, Frisk; enclitics].

δοίδυξ “pestle” [-υκ-].

Δόλοπες – Thessalian tribe [-οπ-].

δρεπάνη “sickle” [-να].

δρύοψ – kind of woodpecker; Δρυόπες – tribe near the mountain *Oeta* [-οπ-].

E

ἐλ- (ϝελ-): Γέλχανος (< *ϝέλχανος) [Hes. “ὁ Ζεύς, παρὰ Κρησίν”; Etruscan *velχana* > Latin *Vulcanus*]; Ἐλύμνιος [Hes. “Ποσειδῶν ἐν Λέσβῳ”; Etruscan *vel-im-na*]; Ἐλύμνιον – locality in Euboea; Ἑλένη (?) – daughter of Zeus and Leda [“alte minoische Vegetationsgöttin”, Frisk; -να]. Cf. Ἔλυρος?

ἐλεδώνη – mollusc species (*Eledone moschata*?) [-να; “Mittelmeerwort”, Frisk].

Ἑλένη see ἐλ-.

ἐλλ- (ϝελλ-) “snake”: ἔλλοψ, ἔλλοπος “snake” [Nicander]; “eel” (< “serpentine”) [-οπ-]; Ἐλλώτια – ritual in honour of Athena (“Schlangengöttin der minoischen Zeit”, Frisk); Ἑλλωτίς – former name of Gortyn (Steph. “Γόρτυν, πόλις Κρήτης … ἐκαλεῖτο δὲ καὶ Λάρισσα. πρότερον γάρ ἐκαλεῖτο Ἑλλωτίς…”) [LA, LB 75 𐀺 *we*].

ἕλμινς see λίμινς.

ἔλυμος “millet; panic grass, *Panicum*” [-υμ-; Hes. “ἔλεμος· σπέρμα ὅπερ ἑψῶντες Λάκωνες ἐσθίουσιν”].

Ἔλυρος [Steph.] – Cretan town [-υρ-]. Cf. ἐλ-?.

ἐρέβινθος [Hes. γάλινθος, λεβίνθιος (= ἐρέβινθος, without prothetic ε-?), ὀδόλυνθος with the same meaning] – “kind of peas, *Cicer arietinum*” [-νθ-].

ἐρπ-: ἕρπυλλος “thyme, *Thymus serpyllum*” [-υρ-]; ἐρπυξή [Diosc.] – kind of plant (“ἐλαφικόν, νέβρειον”) [-υκ-]. Cf. Egypt. ἕρπις [Eust.] “wine” (?).

Ἐρυμ-: Ἐρύμανθος – mountain and river in Arcadia; Ἐρυμναί, Ἐρυμνά – Lycian and Lydian towns [-νθ-, -μ-να].

ἐρυσίβη, ἐρισύβη, in Rhodus ἐρυθίβη “powdery mildew”; ἐρυσιβάω “to be affected with powdery mildew” [-υ(μ)β-].

Εὐρώπη “Europe” [-οπ-]. Cf. Εὖρος “wind from the east”.

Z

ζέφυρος “wind from the west” [-υρ-].

ζιζ-: ζιζουλά [Alex. Med.] “millet” [-υρ-]; ζίζυφον [Geopon., Galen.] “*Rhamnus jujuba*” [-υφ-], cf. Syr. *zūzfā*; ζιζάνιον **“**darnel, cockle; *Lolium temulentum*” [-να].

Ζάκυνθος – island in the Ionian sea (modern *Zante*) [-νθ-].

Ζήρυνθος – city and cave-temple in Thrace [-νθ-].

H

ἦνοψ (?) “flaring” [-οπ-].

Θ

θάλαμη “burrow; gorge; grave”; θάλαμος “room; house” [-αμ-].

θρίαμβος “hymn in honour of Dionysus” [Latin (< Etruscan) *triumphus*].

θρι/υ-: θρῖδαξ, θρῖναξ “lettuce” [-ακ-]; θρινία “vine” [Hes. “ἄμπελος ἐν Κρήτῃ”; -να]; θρῖον “fig leaf”; θρύον “reed”. Cf. also θρίαμβος (?).

θύννος (?) “tunny [tuna], *Thunnus*” [“Mittelmeerwort”, Frisk].

I

ἰέττας (I.-E.?) “father” [Hes. “πατέρας· Κρῆτες”].

Ἴκαρος see καρ-.

Ἰλαττία – Cretan town [N.-Pic. *vilatos*?].

ἰόβλης "reed" [Hes. "κάλαμος παρὰ Κρησίν"].

Ἴτανος see ταν-.

Ἴσμαρος see μαρ-.

ἰτέα "willow, *Salix*", Ἰτέα – Attic toponym [-ε/ι+GI].

K

κάγκαμον (> Akkadian *kurkānu*, Hebrew *karkōm*) "saffron" [-αμ-].

καδ- "mutilation": κάδαμος "blind" [-αμ-; Hes. "τυφλός· Σαλαμίνιοι"]; κάδυρος [Hes.] "κάπρος ἄνορχις" [-υρ-]; Latin *calamitas* (< *cadamitas*) "disaster, misery".

καδμ-: κάδμος [Hes. "δόρυ. λόφος. ἀσπίς. Κρῆτες"]; myth. Κάδμος; Καδμῖλος [-υρ-; Sch. Lyc. "Καδμῖλος λέγεται ὁ Ἑρμῆς παρὰ τοῖς Τυρσηνοῖς"; "Καδμίλος ὁ 'Ερμῆς Βοιωτικῶς"; Etruscan gloss TLE 819 b "*casmillae*... apud Tuscos *Camillum* appellari Mercurium"].

κάδος "jug" (> Hebrew *kad* "tub; scoop"; Latin *cadus*). ["Mittelmeerwort", Frisk]. Cf. κάθιδοι?

κάθιδοι (< Hittite *gazzi*) – kind of vessel [Hes. "ὑδρίαι· 'Αρκάδες"; HT 63, Mycanaean *ka-ti*]. Cf. κηθάριον – "vessel for voting".

καλαμ-: καλάμη "stem, stalk"; κάλαμος "reed" [-αμ-]; καλαμίνθη "kind of mint, *Nepeta cataria* sive *Melissa altissima*"; Καλαμίνθη [Steph.] – African town (in Cyrene?) [-αμ-ινθ-].

καλλαρίας – see γαρ-.

Καλλιόπη – muse who presides over epic poetry [-oπ-].

Κάλυμνα – Aegean island [-υμ-να]. Cf. Κάλυνδα (?) – Carian city [-νθ-].

κάμαξ "pole, spear, handle" [-ακ-].

καμ(αρ)-: καμάρα "covered wagon"; Καμάρα [Steph.] – Cretan town; Καμάρινα – Oceanus' daughter [-να]; here also *Camars, Camers* – elder Etruscan Name for Clusium.

καμπύλη “staff” [-υρ-].

κάνθαρος “scarab”; fish species [-αρ-].

κάνναβις (< Sumerian *kunibu* (?)) “hemp, *Cannabis*”.

καπάνα [Thess.] “cart, vehicle” [Etruscan gloss TLE 832 “γάπος· ὄχημα. Τυρρηνοί”; -να].

καπάνη [Hes.] “hair-cap” [-να].

κάππαρις “capers, *Capparis*” [-αρ-].

καρ-1 [Hes.]: “κάρα· αἴξ ἥμερος Πολυρρήνιοι. ὑπὸ Γορτυνίων... ἄλλοι δὲ ἡ συκῆ Ἴωνες τὰ πρόβατα. καὶ τὴν κεφαλήν; καρανώ· τὴν αἶγα. Κρῆτες”.

καρ-2: Καρία “Caria”; Ἴκαρος – Aegean island; “Icarus” [P[29]]. Cf. ἀκαλ/ρ- (?).

κάραβος “*crab*” [“Mittelmeerwort”, Frisk; -α(μ)β-].

καρδ- “dough, pastry; bread”: κάρδαμον, Mycanaean *ka-da-mi-ja* “cardamom” (as a kind of spice) [-αμ-]; cf. καρδαμίς; καρδαμύλη, καρδαμάλη [Hes.] “unleavened cookie” [-υμ-αρ-]; καρδαμίνη [Hes.] “*Sium latifolium*” [-αμ-(ι)-να]; κάρδοπος “kneading trough” [-οπ-; HT 31 *ka-ro-pa₃*].

καρορύς – kind of vessel [Hes. “ὑδρία. Κρῆτες”; Mycanaean *ka-ra-re-we*].

καρτ- see γορδ/τ-.

καρύκη (< Lydian?) – kind of dish [-υκ-].

Κασσιόπη – Andromeda’s mother [-οπ-].

καυ- see κυδ-.

κεδρ-: κέδρος “*cedar*”; χέδροπα, Hes. κέδροπα [Nom. Pl.] “beans” [-οπ-].

κεκῆνας (Acc. Pl.) “hare” [Hes. “λαγωούς. Κρῆτες”; -να]

κεκρ-: Κέκροψ – founder of Athens [-οπ-]; κεκρύφαλος “headband” [-υφ-?].

κεκύκη (?) [Hes.] “staff” [-υκ-].

κελ-: κέλυφος “peel; shell” [-υφ-]; κελέβη “cup” [“Mittelmeerwort”, Frisk].

κέραμος “clay” [-αμ-]; cf. Didym. κεραμύλλιον “ἀλλὰ καὶ Πέτρου” [-υρ-].

κερκ-: Κερκίνη – Paeonian mountain range; Κέρκινα – town in North Africa [-να]; Κέρκυρα – Ionic island (*Corfu*) [-υρ-].

κηθάριον see κάθιδοι.

---

[29] Minoan prefix.

κήρινθος “bee-bread; pollen”; Κήρινθος – Euboean town [-νθ-].

κιβ-: κίβισις, κυβισίς “bag” [Hes. “πήρα· Κύπριοι”; LA, LB 67 𐀓 *ki*]; κιβώριον “seed cavity of water lily” [-ε/ι+GI]; Κίβυρα – Phrygian town [-υρ-].

κιδ-: κίδαλον [Hes.] “onion”; κίδαρις, κίταρις – kind of high headdress [-αρ-].

κιθάρα “*cithara*” [-αρ-].

κικ-: κεικύνη [Hes.] “mulberry, *Morus nigra*” : *ki-ki-na* after the logogram *FICus* [HT 88; -να]; κικένδα “*Gentiana*” [Etruscan gloss TLE 825; -νθ-]; κικίρδης [Hes.] “fig” [-ρδ-]. Here also Etruscan γιγάρουμ [Diosc.] “βῆτα λεπορίνα . Cf. also κίκιννος “curl, ringlet” (?).

κινάρα “artichoke, *Cynara*” [-αρ-].

κισ-: κίσθος, κισσός “ivy, *Hedera helix*”, derivative κίσθαρος, κίσσαρος [-αρ-]; cf. Diosc.: “κίσθος, ὅν ἔνιοι κίσθαρον ἢ κίσσαρον καλοῦσι”; Κισθήνη – town in Aeolis [-να].

κίσιρνις (?) [Hes.] – bird species [-υρ-να].

κισσύβιον “cup” [-υ(μ)β-; -ε/ι+GI].

κιστ-: κίστη “box, chest; basket”; κιστέρνα “cistern” [-ερ-να].

κίταρις see κιδ-.

κίττυλα [Hes.] “peel” [-υρ-].

κλῖμαξ “stairs, ladder” [-ακ-].

κοδύμαλον [Athen., Hes.] “quince, quince tree, *Cydonia*” [-υμ-αλ-].

κολλ-: κόλλιξ “barley bread” [-υκ-]; κόλλαβος, κόλλοψ “pin; handle” [-α(μ)β-; -οπ-]; κόλλυβος (> Hebrew *ḥālap* “paper, bill”) “penny” [-υ(μ)β-]; κολλύρα = κόλλιξ (?) [-υρ-].

κολοκύνθη “pumpkin, *Lagenaria vulgaris*” [-νθ-].

κόμαρος “strawberry tree, *Arbutus unedo*” [-αρ-; Hes. “κόμαρος· φυτόν τι, ὅπερ φέρει καρπὸν μιμαίκυλον” (cf. μαίκυλον); LA, LB 70 𐀒 *ko*?].

κόνδαξ (?) “peg” [-ακ-].

κοράλ(λ)ιον see κορ-1.

κόραξ “raven, *Corvus corax*” [-ακ-].

κορδύλος “newt”; cf. κορδύλη “bump, tumour” [-υρ-].

κορ-1: κόρι [Hes.] "*Coriandrum sativum*", derivative κορίαμβλον [-α(μ)β-], κορίαννον, Mycanaean *ko-ri-ja-do-no*, *ko-ri-*a_2*-da-na* ["Mittelmeerwort", Frisk]; κορίανδρον – vulgar etymology; ἄκορον "blueflag, *Iris pseudacorus*" [P]; possibly, κοράλ(λ)ιον "coral"; κορίαξος [Alex. Med.] – fish species (?). Cf. Κόρινθος?

κορ-2 "top, head": κορυδαλ(λ)ός "crested skylark, *Alauda cristata*"; κόρυμβος "aft" [-υ(μ)β-]; κόρυς "helmet"; κορυφή "crown (of the head); top, peak" [-υφ-].

κορθίλος (?) [Hes.] – bird species [-υρ-].

Κόρινθος "Corinth"; Τρι-κόρυνθος – Attic town [-νθ-].

κορν- ($*q^w$-): κόρνοψ, πάρνοψ, πόρνοψ "locust" [-οπ-].

κόρσεον "lotus' tuber" [-ε/ι+GI].

κορύνη (?)"crook; cudgel" [-να].

κοσ-: κοσύμβη "woman's headband"; κόσυμβος [Hes.] "cup"; κοσύβατας [Suppl. Epigr.] "donor" [-υ(μ)β-].

κόσκινον "sieve, bolter" [-να].

κόσσ- see κοττ-.

κοττ- "small" (< Semitic or > Semitic (?); cf. Hebrew *qātān* "small"): κόττος "bullhead, goby, *Cottus gobio*"; κότταβος, κόσσαβος – popular game in Athens; κοτταβία [Hes.] "curly(-head)" [-α(μ)β-?]; κοττάνη [Aelian.] – fish species; κόττανα – kind of small figs; "girl" [Hes. "κόττανα· εἶδος σύκων μικρῶν. καὶ παρθένος παρὰ Κρησὶ κόττανον"; -να]; κοττάρια [Hes.] "millet" [-αρ-]; κόττυφος, κόσσυφος "blackbird, *Turdus merula*" [-υφ-].

κοτύλη "cup"; liquid / dry measure (0.274 l) [-υρ-].

κρωβ/μ-: κρώβυλος "crest; plume" [-υρ-]; Κρῶμνα [Steph.] – Paphlagonian town; Κρῶμνος [Herod.] – Peloponnesian town (*b* < *mn*?).

κύαμος, πύανος "bean"; Πυανόψια, Πυανέψια ($p < *q^w$) – Athenian feast in honour of Apollo and Athena [-οπ-, LA, LB 50 𐀢 pu].

κύγχραμος, κύχραμος "quail, *Coturnix*" [-αμ-].

κύδνος, κύκνος “swan, *Cygnus*” [LA, LB 81 𐀓 *ku*].

κυδ- (*καυδ-): Κύδωνες – Cretan tribe; Κυδωνία – famous Cretan city [HT 13, 85 *ku-do-ni*; HT 26 *ka-u-do-ni*; HT 13 *ka-u-de-ta*; -να, -νθ-?]; Καυλικοί [Steph.] – Ionic tribe. Cf. Ital.. *Caudium*, *Caulonia*?

κυλίνθιον [Hes.] “wooden mask” [-νθ-].

κύμινον “caraway, cumin” [HT 54, HT Wc 3014 *ku-mi-na-qe*; -να].

κυπάρισσος “cypress” [“Mittelmeerwort unbekannten Ursprungs”, Frisk].

κώρυκος “leathern sack” [-υκ-].

Λ

λαβ-: λάβιρος [Hes.] “pit, hole” [-υρ-]; λαβύρινθος “labyrinth” [-υρ-ινθ-]. Comparison with *λάβρυς [Plut. “Λυδοὶ γάρ λάβρυν τὸν πέλεκυν ὀνομάζουσι”] seems to be mistaken.

λάβραξ “grouper, *Labrax lupus* sive *Sebastes marinus*” [-ακ-].

Λάμυρα, Λίμυρα – Lycian river and town [-υρ-].

λαρ-: Λάρισ(σ)α – Aeolian and Thessalian towns; Λάρυμνα – Boeotian town [-υμ-να]; Λαρύνθιος [Sch. Lyc.] – epithet of Zeus [Etruscan *lar-* everywhere; HT 98 *da-ru-ne-te*; -νθ-].

λάρναξ “box, coffin” [-ακ-].

Λάτυμνον [Sch. Theocr.] – mountain near Croton [-υμ-να].

λαυκ- “to rule”: Λίκυμνα [Strabo] – acropolis (“palace”) of Tiryns [Etruscan Perf. *luc-a-ir-c-e*, NA *-um-u* > Latin *lucumo*; *laχumni* (Loc. *lauχumne-ti*) “palace”, Λυκομίδαι [Hes.] “γένος ἰθαγενῶν”; Latin *Lucina* “Our Lady” (epithet of Juno) [*-na*]; Etruscan-Latin *Lucretius*. Etruscan-Latin *Lucretius*. Cf. Λυκάμβης – PN; Λύκαμνος [Arcad.] – unclear toponym [-αμ-να]. Cf. δαῦκος [Hes.] [“θρασύς. καὶ βοτάνη τις Κρητική”].

Λαύρ(ε)ιον – mountain in Attica [Etruscan-Latin *laurus*].

λεβίνθιος see ἐρέβινθος.

Λεπέτυμνος (myth.) – Methymna’s husband (a town in Lesbos was named in her honour) [-υμ-να].

λεχέρνα [Hes.] – rite in honour of Hera in Argos [-ρ-να].

Λῆμνος, Λᾶμνος “Lemnos” [Etruscan *lemni-*].

λίμινς, ἕλμινς, ἕλμινθος “helminth” [-νθ-; cf. Etruscan. *zal-* : *esl-*; *purt-* : *eprt-* (> πρύτανις); *Etrusci* : Umbrian *Turskum*].

Λίκυμνα see λαυκ-.

Λυκάμ-: see λαυκ-

M

Μάθυμνα, Μήθυμνα – town in Lesbos [Etruscan *mat-* “to devote”; -υμ-να].

μαίκυλον, μιμαίκυλον “fruit of strawberry tree” [-υρ-; Red.]. See κόμαρος.

μαλ-: μαλέα, μηλέα “apple-tree” [-ε/ι+GI]; μᾶλον, μῆλον “apple”; μάλβαξ [Luc.], μαλάχη “*Malva*” [-ακ-?].

μαρ-: Doric μαρύομαι “to bind”; μέρμις [-θ-; Red.]; μήρινθος “thread; cord” [-νθ-].

μάριν (Acc. Sg.) [Hes.] “swine” [“τὴν σῦν. Κρῆτες”].

μάρτυρος “eyewitness” [-υρ-] (not connected with Egypt. **metre*).

μάτταβος [Hes.] “unwise, foolish” [-α(μ)β-].

μέθλην (Acc. Sg.) [Hes.] “sheep, ram” [LA, LB 13 𐀕 *me*].

μέμβραξ [Aelian.] – cicada species [-ακ-].

Μέροπες – ancient inhabitants of Cos; Μέροψ, Μερόπη – mythical personages [-οπ-].

μέσπιλον “medlar, *Mespilus germanica*” [-υρ-].

Μήθυμνα see Μάθυμνα.

Μηκύβερνα (?) – town in Chalcidice [-ρ-να].

μηλ- see μαλ-.

μήρινθος see μαρ-.

μιμαίκυλον see μαίκυλον.

μιν-: Μίνως – probably, the title of some Cretan kings, taken as a name (> Etruscan *mine*, *mina-te*); Μινώα – Cretan town.

μιρύκεον [Hes.] “reed” [-υκ-; -ε/ι+GI].

μιστύλη, μυστίλη "piece of bread, used as a spoon" [-υρ-].

μολ-: μόλυβδος (also -ιβδ-) "the element lead" [-υ(μ)β-]; μολύβδαινα "leadweight, ball" [-υ(μ)β-; -να?]; Μολύκρειον – Aetolian town [-υκ-].

μορμύρος, μορμύλος – fish species, *Pagellus mormo* [-υρ-].

Μοστινή – Lydian town [-να].

μοψ-: Μόψος mythical personages; Μοψοπία – ancient inhabitants of Attica [-οπ-].

μυ-: μύαξ "mussel" [-ακ-]; μυάκανθα [Geopon., Diosc.] "asparagus" [-ακ-α-νθ-].

μυρ- "fish" [Hes. "μύλλον· … καὶ εἶδος ἰχθύος μύλλος"; "μύρος· ἰχθῦς ποιός. καὶ ἡ ἄρρεν μύραινα"; Μύρινα (Lemn. *morina*(*-il*)) – city in Lemnos [Etruscan *murin-*; *-na*; LA, LB 73 𐀖 *mi*].

μυρσίνη "myrtle" [-να]; name Μυρσίλος is likelier Anatolian.

Μυτιλήνη, Μιτυλήνη –main city in Lesbos [-υρ-να].

μῶλυ (?) – unknown officinal plant [Fremdwort unbekannter Herkunft, Frisk].

N

ναϜός (?), Lesbian ναῦος "temple" [PH 6 *no-na-wa* (?) – cf. *da-ma-te* : Ῥαδάμανθυς : *no-da-ma-te*].

ναπ- "plant, tangle": νάπα, νάπη, νάπος "woody valley" [Etruscan *nap-ti* (Loc.) "in (sacred) grove"; Latin *nepeta* "*Nepeta cataria*", Tusc. *nepa* "greenweed, *Genista*"; Latin [Fest.] *napurae* "cord"].

νηδύς "stomach; entrails" [Etruscan *neθśra* "haruspicy, a kind of fortune-telling (using entrails)" ; *netśvis* "foreteller"].

νηρ- "water": Modern Greek νέρο id.; Νηρεύς, Νηρεΐς (Νηρηΐς) – sea deities; νηρίτης (νηρείτης) – mollusk species; Milyan *nere* "nymph" (Dat. Pl.) [Etruscan *neri* "water"; NP *nerina*(*i*)].

νικύλεον [Athen.] – kind of fig; Νικυρίς [Suda] – unknown toponym ["Ἑρμῶναξ δ' ἐν Γλώτταις Κρητικαῖς σύκων γένη ἀναγράφει ἀμάδεα καὶ νικύλεα"; LA, LB 30 𐀛 *ni*; -υρ-; -ε/ι+GI].

O

ὀδόλυνθος see ἐρέβινθος.

Οἰάνθη – town of Locri [-νθ-].

οἴκυλος [Theogn.] [“οἴκυλος, τό ὄσπριον” (see ὄσπριον); -υρ-].

ὄλυνθος “winter fig”; Ὄλυνθος – Chalcidian town [-νθ-].

ομφ-: ὄμφαξ “green grapes” [-ακ-]; ὀμφαλός “cone; navel” [-αρ-].

ὀνόπη [Hes.] – kind of black grapes [-οπ-].

ὀπυίω “to marry” [Etruscan *puia* “wife”].

ὄρνις “bird” [-θ-].

ὄσπρεον, ὄσπριον “leguminous plant”, mainly “bean” [-ε/ι+GI].

οστρ-: 1. “crock; shell”: ὄστρακον id. [-ακ-]; ὄστρειον “mollusk, covered with shell” [-ε/ι+GI?]; 2. “wall, fence: ὄστριμον “shed, cattleshed” [-υμ-]; cf. also ὀστρύα [Theophr.] “hop hornbeam, *Ostrya caprinifolia Scop.*”.

Π

παν-: πανέλοψ, πηνέλοψ “teal, *Anas Penelope*”; Πενελόπα, Πηνελόπα “Penelope” [-οπ-].

πάπραξ [Her.] – fish species [-ακ-].

πάπυρος “paper” [-υρ-].

παρθ(εν)-: παρθένος “virgin”; Παρθενόπη – Tyrrhenian island; Παρθενόπεια – ancient name of Naples; Παρθενοπαῖος – mythological hero [-οπ-].

πά/όρνοψ see κόρνοψ.

πείρινς, πείρινθος “Wagenkorb” [-νθ-; HT 116 *pi-ri*$_2$*(n)-te GRAnum 5*].

Πέλοψ “Pelops” [-οπ-].

πεν- see παν-.

πέρδιξ, πῆριξ [Hes.] “partridge” [“Κρῆτες”; -υκ-].

Πέρινθος – Thracian town [-νθ-].

περσ-: περσέα – kind of Egyptian tree [-ε/ι+GI]; Περσεύς, Περσεφόνη (Περσέφασσα, Φερσέφασσα) – mythological personages [-να, -σσ-].

πην- see παν-.

πιθ-: πίθος “barrel”; πιθάκνη, φιδάκνη “keg” [-ακ-να].

πίναξ “table, plate, picture” [-ακ-].

πίνη (?) “pearl” [“Mittelmeerwort unbek. Ursprung”, Frisk].

Πιτάνη – Mysian town and district in Sparta [-να].

πίτυρον “bran” [-υρ-].

Πόλυμνον [Paus.] – unknown toponym [-υμ-να-].

πόρταξ “heifer” [-ακ-].

Προβάλινθος see *Βάλινθος.

Πρόσυμνα – ancient town in Argolis [-υμ-να].

πρύτανις “lord, ruler” [Etruscan *purt-/eprt-* id.; Latin *Frutis* – epithet of Venus, *Frutinal* “templum Veneris Frutis”; Etruscan *purtśvana* > Latin *Porsenna*]; seems to be a borrowing from Asia Minor: cf. Lycian *epriti* “deputy”, Hattic *puri* “lord”.

πτελέα, Mycenaean *pte-re-wa* “elm, *Ulmus campestris*” [-ε/ι+GI]. Cf. μήλεα, ἰτέα.

πύνδαξ “lid *or* bottom of a vessel” [-ακ-].

Πύρανθος [Steph.] – Cretan town [-νθ-].

πώλυπος “Cephalopoda” (> vulgar etymology πολύπους) [“Mittelmeerwort unbekannter Herkunft”, Frisk].

Ρ

Ῥαδάμανθυς see δαμ-.

ῥάξ, ῥώξ “berries, grapes” [“Sonst isoliert; wohl Mittelmeerwort”, Frisk].

Ῥίθυμνα [Steph.] Cretan town [Etruscan PN *ritumena*; -υμ-να].

ῥόβιλλος [Hes.] “kinglet, *Regulus*” [-υρ-].

ῥυκάνη “hand plane” [-να].

ῥυστόν [Hes.] “spear” [“δόρυ· Κρῆτες”].

Σ

σαγήνη “seine, net” [-να].

σάκκος (?) “bag, sack” [< Hebrew *śaq* id.].

σαλ-: Σαλαμίς “Salamis” [-αμ-]; cf. σαλαμάνδρα [similar to κορί-ανδρον?]; Σαλύνθιος [Thuc.] – Acarnanian princelet.

σάλπη (?) – fish species, “*Box salpa*” [“Unerklärtes Mittelmeerwort”, Frisk].

σάμαξ “reed” [-ακ-].

σαμβύκη – kind of harp [-υκ-]; cf. Hebrew *šebākā* “net”.

σάνδυξ “Bez. eines hellroten Farbstoffes, einer hellroten Mineralfarbe” [-υκ-].

σαπ-: σηπία “cuttlefish”; σαπέρδης [Hes.] “ὄνομα ἰχθύος. οἱ δὲ ταρίχου εἶδος. ἄλλοι ὑπὸ Ποντικῶν τὸν κορακίνον ἰχθύν” [-ρδ-]. Cf. Coptic *šaburi*?

σαργ-: σαργός (?) fish species, “*Sparus sargus* sive *Sargus Rondeletti*” [“Mittelmeerwort unbek. Herkunft”, Frisk]; unclear σαργάνη “cord” [-να].

σάσαμον, σήσαμον “*sesame*” [HT 32 *sa-sa-me*; -αμ-; LA, LB 31 𐀮 *sa*].

Σάτυρος “Satyr” [-υρ-]; Etruscan [-υρ-]; Etruscan *satna* [-να]; Etruscan-Latin *Saturnus* [-υρ-να]; Etruscan-Latin *Saturejum* [-υρ-].

σηπία see σαπ-.

Σειληνός see σιλ-.

σελ- (?): σελας “light; shining; lightning”; Σελήνη, σελάννα “moon” [-να].

σέσυφος [Hes.] “cheat, swindler” [-υφ-].

σίβυλλα, Σίβυλλα “prophetess, *Sibyl*” [-υρ-].

σιβύνη “hunting spear; bear spear” [-να].

Σίβυρτος (?) [Steph.] – Cretan town [-υρ-?].

σικ- see συκ-.

Σιληνός, Σειληνός – rural deities [-να].

σίλλυβον “fringe; chain; pin” [-υ(μ)β-].

σιπύη “chest for bread” [HT 8 *su-pu*$_2$*-188*].

σισ-: σισύμβριον [Theophr.] “*Iris sisyrinchion*” [-υ(μ)β-]; σίσυρα “sheep’s *or* goat’s fell” [-υρ-]; σίσυρνα id. [-υρ-να]; Σίσυφος “Sisyphus” [-υφ-].

σῖτος “cereals; bread; food” [LA 041 𐀯 *si*; “ohne überzeugende Etymologie”, Frisk].

σκάλοψ see σκολ-.

σκαπάνη “hoe, mattock” [-να].

σκολ-: σκόλοψ, “stake; hook” [-οπ-]; σκολόπαξ “woodcock” [-οπ-ακ-]; unclear σκάλοψ “mole” [-οπ-].

σκύλαξ “puppy” [-ακ-].

σμαρίς – small sea fish [“Herkunft unbekannt; gewiß Mittelmeerwort”, Frisk].

σμήρινθος see μερ-.

σταφυλή “bunch of grapes” [-υρ-].

συβήνη, συβίνη “leathern case” [-να].

συκ- (*συλκ-?): σικύα “pumpkin *or* melon”; σίκυος “cucumber”; συκέα “fig”; συκάμινος “mulberry tree, *Morus nigra*” [-αμ-να] (> Semitic *šiqmīn*); Σικύνη, Συκίνη – different toponyms [-να]; Σικύνθος [Plut.] – unclear toponym [-νθ-]; HT 8 – *si-ki-ra*; HT Zb 185 – *su-ki-ri-te-no-ja* [-υρ-]. Unclear Etruscan PN *silqetena* [-νθ-ε-να?], Latin *siliqua* “bean”. Cf. Hebrew σικέρα “grain *or* fruit wine” (?).

Σύρινθος [Steph.] – Cretan town [-νθ-].

T

ταν-: Τάνος – Cretan town; ʼΑθηνᾶ “Athene”; Ἴτανος (Mycenaean *u-ta-no*) – Cretan town [P].

τερέβινθος, τέρμινθος “*Pistacia terebinthus*” [-νθ-].

τήβεννα “cloak” [-να].

τιβήν (?) “tripod” [LA, LB 37 𐀴 *ti*; “Unerklärtes Fremdwort”, Frisk].

Τίρυνς, Τίρυνθον – city in Argolis [-νθ-].

τιτ-: τίταξ [Hes.] “lord”; Τιτακός – PN [Etruscan *tit-*; -ακ-]; unclear τίτανος “gypsum” [“Technisches Wort unbekannten Ursprungs”, Frisk; -να]; τίτυρος “sheep *or* goat” [Theocr.]; bird species [Hes.] [-υρ-].

τολύπη “hank of wool” [-υπ-].

τόρδυλον, τόρδιλον [Diosc.] "*Seseli* sive *Tordylium officinale*" [-υρ-].

τορύνη "stirring rod" [-να].

Τρικόρυνθος see Κόρινθος.

Τρίοψ, Τριόπας – mythological personage [-οπ-].

τροχίλος, τροχῖλος, τροχεῖλος (?) "plover; wren, *Pluvianus* sive *Carsorius Aegyptius*; *Troglodytes parvulus*" [-υρ-].

τύβαριν (Acc. Sg.) [Pollux.] – kind of spice [-αρ-].

τυΐ [Hes.] "here" ["ὧδε. Κρῆτες"; Etruscan *θui* id.].

τύραννος "lord" ["Unerklärtes Fremdwort aus der kleinasiat.-ägäischen Kultursphäre", Frisk; Etruscan *turan* "Venus"].

Τυρσηνοί, Τυρρηνοί – probable original name [Egyptian *trš*; *E-trus-ci*, Umbrian *turskum*, etc.].

Υ

ὑακ-: ὕαξ [Hes.] "rudder oar" [LA, LB 10 𐀄 *u*]; Ὑάκινθος, Ὑάκυνθος "Hyacinth" ("helmsman") [-νθ-].

ὕραξ [Nic.] "swine" [-ακ-]

ὑτ- "4": Ὑττηνία [Steph.] [= Τετράπολις; Etruscan *huθ* "4"]; Ὑτέννα [Steph.] – Lycain town.

Φ

Φαιστός – ancient Cretan city [Mycenaean *Pa-i-to*].

φαλ- "top; head": φάλα [Hes.] "head"; Φάλανθος – Arcadian mountain and town [-νθ-]; φαλακρός, φάλανθος "bald" ~ φαληρίς, φάλαρις "common coot, *Fulica atra*" [Etruscan [Fest.] *falado* (*falando*) "sky"; *palatum* "*palate*"; *Palatium*; -αρ-]; probably, also Φαλάσαρνα – Cretan town.

φάρμακον "potion; medicine"; φάρμακος "wizard"; "victim" [-ακ-].

φιδάκνη see πιθ-.

φιλ-: φιλύκη – kind of shrubs, *Rhamnus alaternus* (?) [-υκ-]; φιλύρα "limetree" [-υρ-];

φυλ-: φύλαξ "guard" [-ακ-]; φύλοπις "battle" [-οπ-].

X

Χάρυβδις (?) "Charybdis" [-υ(μ)β-?].

χεδρ- see κεδρ-.

χηραμός (?) "hole; cave" [-αμ-].

χίμαρος (?) "goat" [-αρ-].

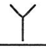
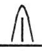
Appendix

Possible acrophonic prototypes of some Cretan syllabograms

Sign	Pictorial meaning	Reading	Associated lexemes[30]	Derivatives
𐀀	double axe	*a*	αἶρα (?)	
𐀂	reed, cane	*i*	ἰόβλης	
𐀊	door, gate	*ja*	a) αἰβάλη (??) b) janua (??)	
𐀑	a) basket b) bowl	*ki*	κίβισις, κυβισίς, κίββα κισσύβιον	
𐀒	fruit or inflorescence	*ko*	a) κόμαρος b) κόρι	κορί-αμβλον, κορί-ανδρον, κορί-αννον
𐀓	flying swan	*ku*	κύδνος, κύκνος	
𐀔	a) dog's head b) cat's head	*ma*	Μαῖρα onomatopoeic	
𐀕	ram's head	*me*	μέθλην	
𐀖	fish	*mi*	μύρος, μύλλος	μύρ(-)αι-να
𐀗	bull's head	*mu*	onomatopoeic	
𐀛	fig tree	*ni*		νικ-ύλ-εον
𐀜	palm	*no*	νόσ(φιν) (?)	
□	crossed arms	*nwa*		
𐀡	grassy plant or branch	*pu*	πύανος, κύαμος	Πυαν-όψια
𐁆	shrubs (?)	*pu_2*	*pu-ko-so*, πύξος	

---

[30] The lexical examples are not commented on here, as they are all given in the *Vocabulary*.

Sign	Pictorial meaning	Reading	Associated lexemes[31]	Derivatives
	a stalk of sesame	*sa*	*sa-sa-ma*, σάσαμον	
	sheaf of cereal crops	*si*	σῖτος	
	ordinary axe	*so*	σοάνα	
	tripod	*ti*	τιβήν	
	fig	*tu*	τῦκον	
	rudder oar	*u*	ὕαξ	
	snake	*we*		ἔλλ-οψ, ʽΕλλ-ωτ-ίς, ʼ Ελλ-ώτ-ια

---

[31] The lexical examples are not commented on here, as they are all given in the *Vocabulary*.

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

On the Origin of Milyan Nouns

Vitaly Shevoroshkin
University of Michigan

The alphabetic (letter-written) Mil[yan] language is represented by two, relatively long, alphabetic poetic inscriptions engraved in stone about 25 centuries ago: 44c-d (Xanthos; a part of a longer text, written in three languages: Lyc[ian], Greek, Mil.) and 55 (Antiphellos). The closest relative of Mil. is Lyc.; both are considered by scholars to be closely related dialects. Both are a part of a group of dead I[ndo-]E[uropean] languages called Anat[olian] or Hitt[ite]-Luv[ian] which includes three other alphabetic languages, Lyd[ian], [Car]ian, and Sid[etic], three cuneiform languages Hittite, Pal[aic] and CLuv. (= Cuneiform Luvian), as well as the HLuv. (= Hieroglyphic Luvian) language.

All these languages (except Lydian) have preserved so-called IE laryngeals ([x]-type fricatives); none has developed the feminine gender, which appeared in the western part of the IE unity after the P[roto-]IE language had split into a western branch and an eastern branch (this latter evolving into the above listed Anat. languages).

Introductory Remarks

Inscriptions in Mil. language show practically the same letters which we know from Lycian, but there is no Mil. τ or *θ*; letter *h* (< $*s$) appears in Mil. only in acc. sg. Hñtawã (name of a Lyc. city); *h-* is dropped in Mil. word *uwedri-* 'all' < Lyc. *huwedri-* id. - Both in Mil. and Lyc., non-lenited consonants may be opposed to the lenited ones, cf. verbal endings *-ti*, *-te*, *-tu*, vs *-di*, *-de*, *-du* (but in Mil., both *t* and *d* can easily vary both in verbal and nominal forms). - Lyc.-Mil. *x* [x] is a clear example of a non-lenited fricative which is opposed to its lenited counterpart *g* [γ], as in *xuga-* 'grandfather', matching precisely CLuv. *hūha-* (lenited *-h-*) vs. Hitt. *huhha-* (non-lenited *-hh-*). Thanks to J. Rasmussen and D. Schürr we know today that Mil.-Lyc. *q* $[x^w]$ can originate either from PIE $*Hw$, $*H^w$, or (less frequently) from PIE $*g^wh$. It is not excluded that the Lyc. name *QaGadunimi* (recently discussed by DS) is based on a reduplicated PIE verb $*g^whedh$- 'ask, wish'; if so, the intervocalic *-G-* (usually from $[\gamma^w]$) represents a lenited variant of *q*: *qa-Gad-* $[x^wa\text{-}\gamma^wad]$ < $*g^whe\text{-}g^whedh$-. This would allow for a phonetic opposition of non-lenited vs lenited fricatives:

velars *x* [x] : *g* [γ] (as in *xuga-*) vs
labiovelars *q* $[x^w]$: *G* $[\gamma^w]$ (as in *qaGad-* ?).

The Mil.-Lyc. letter *G* (DS uses *γ*; CM employs *κ*; Neumann-Tischler use *K*) seems to reflect a labiovelar, appearing in *laGr-a* (acc. pl. neut.), *laGr-i* (dat.-

loc. sg.) = Hitt. *lāhura-* (with a lenited *-h-* after a long vowel; var. of *lahhura-*) 'offering table, stand for pots/offerings' (< *lāhu-* 'pour'); *mrGGas* (acc. pl.) = Hitt. Margwaya-deities < PIE **merg*^{w}- 'dark'. Thus, *G* originates from [γ^{w}] <**Hw*/**H*^{w}, **g*^{w}, **g*^{w}*h*.

We have to keep in mind that the Mil.-Lyc. writing is traditional; the pronunciation at the time when inscriptions were being carved was already considerably different from the written language; to keep things simple, this problem is not discussed below.

Recent research has revealed cases where Mil. *k* originates from PIE **g* or **gh*:

(a) *ki-ki-ti* '(Trqqiz) announces [addressing an offering priest]' < PIE **gē(i)-*/**gi-* 'sing, call, shout' (IEW 355), **geH(y)-* 'sing' (LIV 162); *kiki-* does not mean 'to pay'.

(b) *puke-ti* 'saves, protects' (god Nartri of Kaunos saves Xerẽi from killers: *ul-ax-a-d-i*) < PIE **bheug-* 'to free' (etc.), IEW 152; LIV 168; note DLL 126: 'favorable action'.

(c) *kal-u* 'I'll call/I'm calling' < PIE **ghel-*;**ghōl-* [in Slav.] 'call, shout' (IEW 428).

There seems to be a close link betw. Mil. and Lyc. languages, on the one hand, and the Lyd. language, on the other. Cf. a few Mil.-Lyd. cognates:

(d) Mil. *kudi* 'where' [cf. Slav.] : Lyd. *kud* id. <An(at). **k*^{w}*ud-* <* PIE **k*^{w}*u-dhe*.

(e) Mil. *kuti* 'where, as' : Lyd. *kot* id. < An. **k*^{w}*oto-* (CM in AHP 346 et passim.).

(f) Mil. *-ke* 'and' [not to Luv. *-ha*; no '*-ke*' in Lyc.] : Lyd. *-k* 'and' < PIE **-k*^{w}*e* id.

(g) Mil. *ẽne* 'this' (pron. which introduces acc. comm.) : Lyd. *ãna-* id. < An. **óno-* id.

(h) Mil. *-ẽne/i-* iter. suff. (*mur-ẽn-e-* 'invigorate', *qel-ẽn-e-* 'preserve', *trbb-ẽn-i-* 'deliver') : Lyd. *-ẽni-* (*c-ẽn-* 'dedicate'$^{?}$, *laλ-ẽn-* 'speak', *šaw-ẽn-*) < An. **-ánni-* (CM).

(i) Mil. *ñtuw-it-ẽni* 'leader' : Lyd. *anto-la-* 'statue' <An. **en-dwaH-ólo-* 'human', CM.

(j) Mil. *zr-ẽt-ẽni* 'protector' : Lyd. *šar-ẽt-a-* id. < An. **serńto-* (root as in *šaro-ka-*).

(k) Mil. suff. *-ka*, *saba-ka* = *saba-* 'protection' : Lyd. *šaro-ka-* id. : PIE/Slav. **-ka*.

(l) Mil. *trbb-*, *trbb-ẽn-i-* 'deliver' : Lyd. *tro-* 'hand over' < An. **drowaHye/a-* (CM).

(m) Mil. *urtu-* 'tribute' : Lyd. *wrato-*, *wratu-* 'pledge'$^{?}$ < PIE **wert-*, Engl. *worth*, etc.

(n) Mil. _tu-_ ‘place (as a treat)’ : Lyd. _-cu-_ ‘dedicate’ / _-do-_ ‘put’ < An. _*duwV-_ (CM).
(o) Mil. _xus-t(t)i-_ ‘agility, dexterity’ : (?) Lyd. _ws-ta-_ ‘alive’ < Anat. * _Hus-tó-_ (CM).
(p) Mil. _mruwa-*_ ‘stele’, adj. _mruwa-si-_ : Lyd. _mru(wa)-_ ‘stele’ (DLL); origin unclear.
(q) Mil. loc. sg. _mrGG-d-i_ < _*m(a)rgw-id-_ ‘tomb, protected by _mrGGa-_ deities’ : Lyd. Mariw-d-a- (god-protector of tombs); cf. Mil. acc. pl. _mrGGa-s_ ‘Dark deities’ : Hitt. Margwaya-gods : CLuv. Marwa-gods (cf. Lyc. _mrbbã-na-_ ?) < PIE _*merg_^{w}- ‘dark’.
(r) Mil.-Lyc. _pije-_, _pi-bi(je)-_ ‘give’ : Lyd. _bid-_ id. (cf. _bi-fe-_) < ?PIE _*bhei-/*bhi-_ id.; Lyc. dat. pl. _pi-be-r-e_ ‘for giving/paying’$^{?}$: Lyd. verb _bi-fe-r-_ ‘give’$^{?}$ (to the above).
(s) Mil. _kres-e_ ‘to troops’ (/‘during fights’$^{?}$) : Lyd. _-karse-_ ‘cut out’ < An. _*korseye-_.
(t) acc.: Mil. _tasñt-u_ (DS) ‘stand’ (:Lyc. _tahñta-_) : Lyd. _tasẽN_ ‘vot. obj.’ < An. _*dasó_.
(u) Mil. _sbir-te-_ ‘(promised) share’ : Lyd. _sfar-wa-_ ‘oath’ < An. _*swór-wo-_ id. (CM).

Some data indicate that a special link may have existed between the Mil. and the Car. languages (though the Car. material is still mostly incomprehensible); cf.:

(u) Mil. _ml-ẽ_ ‘of priests’ (gen. pl.; nom.-acc. pl. _mlẽz*_ ?) : Car. nom.-acc. pl. _mol-š_ ‘priests’ < ? PIE _*me/oldh-_ ‘proclaim’ [different: Mil. pl. _mle-z_ ‘meals (for troops)’].
(v) Mil.-Lyc. _ube-_ ‘monument, stele’ : Car. and _ue_ ‘tomb’ (note Yakubowich 2005: Lyc. _ube_ [uƀe] ‘monument’ vs Car. _upe_ [uβe], var. _ue_ id., to South-Anat. [ub-] ‘build’). Adiego’s transcription _‘upe’_ doesn’t allow a natural identification of Car. _ube_ (sic!) ‘tomb’ with its reduced phonetic variant _ue_. The Car. consonant letter in [uβe] (better [uƀe]) is B-shaped, originating from B _b_, so it has to be transcribed as _b_. - On the other hand, Adiego transcribes a Car. letter Γ (archaic _pi_) as _‘b’_, though it is a _p_ [p].

Mil. incriptions contain a considerable number of words; most of the lexemes appear in texts only once. Mil. lexemes which have cognates in Lyc. usually show the same, or a similar, meaning when compared with their Lyc. counterparts; but there are many more Mil. lexical items which require detailed explanation.

Mil. inscriptions include 50 strophes; there are 20 or more words in each strophe (if one counts both full-meaning words and particles). If a given Mil. word is ascribed, in my present paper, a certain meaning, it is because an appropriate context suggests this meaning; if there exist phonetically precise counterparts in other Anat. languages and/or in the reconstructed PIE which show a similar meaning, they are briefly mentioned as well. Comparing my present paper with my 2008 [2009] study (IM), I would like to state that most of the IM interpretations of Mil. lexemes (Mylian Word List, IM 79-95) have been confirmed by the subsequent research, though many of them have been slightly corrected in the process. As I see it now, about two dozen lexemes were incorrectly identified by me in 2008.

Mil. inscriptions have been intensively discussed during many scholarly meetings in Moscow in Oct.-Nov. 2010, and later in March 2011; a considerable amount of new interpretations has been added to the Mil. lexicon as a result.

At some point it became clear that the Lyc. ruler Xerẽi, the author of the Mil. inscription 44c-d, considered many actions of his predecessor and elder brother Xeriga in a very negative light. Xeriga is described by Xeriga as an inept ruler who didn't care much about tax collection, being busy in organizing feasts, etc. [see MZL 29-37; there is a similarity in understanding Xerẽi's personality on the material of the Lyc. text of 44a-c, on the one hand (cf. DS's study ZAP-II), and on the material of the Mil. text of 44c-d, on the other (cf. MZL 25f.)].

At one point (text 44c.41-4; our ex. 1), the stormgod Trqqiz warns Xeriga not to libate those troops who just came from raids [and] fights; then Trqqiz urges Xeriga to occupy himself with the matters of tax collection:

> (1) *[wisiu]-pe: ni-ke: waxsi* (voc.)*: pibi* (imp.)*: kres-e* (dat. pl.)*: (a)rm̃pal-i: pre-di* (abl.)*: xapa-x-i* (loc. sg.)*: lax]a-di* (abl.)*: mrGGa-s* (acc. pl.) *uwẽti: sebe (e)nẽ: laGr-i* (dat.-loc. sg.)*: xñtabaimi* (voc.)*: slãma* (imp.) *zrbbl-ã* (acc. sg.).
>
> "And don't give (*ni-ke ... pibi*) [drink(s)]$^{?}$ (acc. sg. *[wisiu]* = 44c.56 *wisi-u* ?) to the troops (dat. pl. *kres-e*) from raids [and] from fights (abl. *pre-di ... laxa-di*) during the divine (*(a)rm̃pali*) rapproachement-related feast (*xapa-xi* : Hitt. *happ-* 'join, attach'; Mil. loc. sg. *xi* 'feast'), Warrior (voc. *waxsi* = Xeriga ?), when libating (lit. 'when drinking': gerund-like form *uwẽti*) the Dark deities (acc. pl. *mrGGa-s*), and at the offering stand (loc. sg. *laGr-i*), Ruling one (voc. *xñtabaimi*), enlarge the growth!."
>
> [Altern.: Mil. *uwe-* 'to honor'; to An. *ewg^{w}- 'vow', etc.; cf. Lyc. PN Masa-uwẽti-].

Apparently, Xeriga didn't pay any attention to this sober advice, – so the enemies did attack, but thanks to commander Xerẽi's counter-actions the situation didn't turn into a total disaster (44c.44-6; cf. MZL 33). Only when speaking about

Xeriga's death (as in 44d.59-62), Xerẽi refrains from any negative depiction of Xeriga.

Knowing that Xeriga would be rather belittled than praised by Xerẽi we are now able to understand the following sentence (44c.39-40, ex. 2; as in the whole passage 44c.37-44 [=3 strophes], the narrative is about Xeriga):

> (2) *ebi n(e) ub-e ker-e: seb[e-di : k]udi: slãma-ti: zrbbl-ã*
>
> "The Local one (*ebi*, as in Lyc.; apparently, Xeriga) does not watch (*n(e)* ... *seb[e-di]*) where (*kudi* = Lyd. *kud*) in cities (*ker-e* = Lyc. *ter-e*, DLL) ... one enlarges (*slãma-ti* : Lyc. *hlm̃mi* 'addition, gain'; DLL) the growth (*zrbb-la-* : HLuv. *sarwa-* 'increase')." Several previous attempts to understand this text were unsuccessful since nobody ever tried to translate *n(e)* as 'not' (but this is the only possibility here).

A similar text about Xerẽi in 44c.54-55, naturally, pictures Xerẽi in a positive way:

> (3) *xãzbi: tuminesi: hñtawã: kridesi: sebe-di qirz-ẽ: ziw-i*
>
> "(He = Xerẽi) scours/watches (*sebe-di*) [the cities] X., T., H. [and] K. during the delivery (*ziw-i*) of shares (gen. pl. *qirz-ẽ*)." – Note that *qirz-ẽ* is not acc. sg. but gen. pl. (thus contra Melchert; cf. DLL s.v.); the only acc. sg. form is *qirz-ã* (noun *qirza-*).
>
> For *sebe-* cf. noun *saba-* 'protection unit, guard(s), watch' : Hitt. *sab-as-* as in *sapas-alli-* 'scout', *sapas-iya-* 'to scout' (<PIE verbal noun **sobh-os* < verb **sebh-*?).

It is certainly important to identify large passages (usually 3 to 6 strophes) which narrate such events as a war, a royal journey, a royal funeral, a major offering and/or a feast. In such cases it is not difficult to indicate where the given event begins and where it ends. For instance, in the strophes dXII-XVI Xerẽi speaks about his journey through a part of Caria (Tralles and Busa) and of Central Lycia (Aperlai, then Antiphellos); before the journey starts and after it ends, Xerẽi is clearly in Xanthos. - By the way, the word *xzzãta-* in the strophe d.XIV does not mean 'Xanthos' (pace Schürr & Melchert, DLL); it means 'tribute, tax' (vel sim.); the action is in Aperlai, not in Arñna(-Xanthos): cf. adj. *prlle-li* (to *prll-i* 'in Aperlai' ?). – In Xerẽi's description of the journey, Tralles emerges as being under Lycian rule; on the other hand, Xerẽi does not mention cities of Eastern Lycia.

One of the above mentioned 'thematic' passages is a six-strophe passage of 44d (namely, 44d.53-70); it consists of two parts: (I) three strophes d.XVII-XIX, and (II) three subsequent strophes d.XX-XXII. Both parts are similar in many respects; both seem to represent Xerẽi's instructions to his supporters and heirs.

The former part also includes a narrative about Xeriga's funeral (details are presented in WNG). The latter part seems to reflect Xerẽi's vision of many future periodic (annual?) commemoration feasts, dedicated to his own memory (this section ends just before the conclusion of the Mil. text of the Xanthos stele).

By now it is clear that certain events described in Mil. (including Xeriga's funeral) are connected with production of fire and/or smoke; cf. words *lusasi* (with *asãnã-mla*), *lusalija* (with *zẽna*), *sẽkẽne* (:Lyc. *hẽkene*), *kñtre*, *k<ñ>ta*, *lugãtu* (see *qliju* below).

On many occasions, events described in Mil. inscriptions are very similar to those known from the much older Hitt. texts (cf. HFR; note Ardzinba and similar works).

There are nouns which show that the Mil. language (along with the Lyc.) 'ignores' Čop's Law, though this latter is clearly manifested in Luvian, a very close relative of Mil.-Lyc.: Mil. *medu* 'wine' and Lyc. *medbije*; Mil. *eduli* 'for harm/damage'; Mil.-Lyc. *e/abura* 'security'; Lyc. *padrñta-** 'provision'$^{?}$, *tabaha-za* to *tabaha-** 'sky'.

There is one important trait in the Mil. nominal system: on very many occasions, a noun in sg. has a collective meaning: *zajala* 'taxpayer' (in the sense 'taxpayers'); acc. sg. *ziwalã* id.; *tẽpe* 'nobleman' (='nobility'); *mire* 'commoner' (='commoners'); *erbb-i km̃q-i-ke* 'both for fight and for raid' (= 'both for fights and for raids'), etc.

There are other peculiarities in both Mil. inscriptions which facilitate, to a certain degree, our understanding of Milyan (cf. also my remarks in MZL 26-29 and 37-39).

An Annotated List of Milyan Nouns

Note that, in a few cases, vowel letters have been dropped by inscription carvers, hence writings of the type *pad mruwasa* = *pad(a) mruwasa* 'detachment of the stele' (cf. syn. *kuli mruwasi*); *albm* = *albãma* (or *albã*) 'libation; drinks'; *edes* = *edes(i)* 'offering priest' (syn. *kuprimesi*); *nalax* = *nalax(a)*, possibly, *na* < *ne* + verb *la-xa*.

Some incorrectly written words indicate that the carvers did not know Milyan, so they used letters which were graphically – but not phonetically – similar to certain Mil. characters; cf. *sljtãmi* mistakenly carved for *s<ep>tãmi* 'seven' (in 55), or *slbe* for *sebe* 'and' (55; in Lyc., 'and' is *se*): letter *l* is similar to *e*; letter *j* is similar to *p*.

There are cases where *z* was carved instead a similarly-shaped *t*: cf. *zuta* for *<t>ut-a* (all.) 'for [my] kin', cf. related *tuta-si-z* 'kinsmen'; *xñtawaza* (dat. sg.) for *xñtaw<t>-a* (DS) : cf. Lyc. acc. sg. *xñtawat-ã* 'royalty, rulers'. – The letter *z* is also similar to *ñ*, hence a writing *kzta* for a correct *k<ñ>ta* (DS): cf. a related noun *kñtre*.

In the following list, a noun can be automatically reconstructed (e.g., noun *xuga-** 'grandfather' : Lyc. *xuga-*) if an adj. is present (Mil. *xuga-si*); sometimes a noun can be reconstructed if a related verb is present (cf. **elu-* 'drink, beer' vs *elu-* 'to libate').

Hyphens are used to show the word stucture (roots, affixes, endings): *abr-al-a*; *al-i*.

Many entries include, besides a listing of cognates from other related languages, comparisons of a given noun with one or more other Mil. words of a similar structure, e.g., acc. sg. *xñtawa-t-ã* 'royalty' is built as *xrbbla-t-ã* 'entourage'; *mul-ẽn-i* is built as *tes-ẽn-i* (both forms are acc. sg.; both denote treats); dat.-loc. sg. *tulije-w-i* (to *tulije-we-* 'assembly') is built as *zi-w-i* (to *zi-we-** 'produce-delivery') and as *pllu-w-i* (to *pllu-we-** 'abundance'; cf. also *lbbe-we-** 'takings, booty' vs *erbb-i* ... *lbbe-we-l-i* 'for booty-rich ... fight(s)', note acc. pl. neut. *lab-a* 'booty', syn. to *laja-t-a*).

A given noun is compared to its (quasi-)synonyms if such appear in Mil. texts.

If a given noun is accompanied by an attr., this latter is usually mentioned as well.

If a noun is used as a pendant to another noun (or other nouns), both/all nouns are mentioned. Note a specific case: two nouns may form an appositional construction, for instance, acc. pl. *dewi-s* ... *zrẽtẽni-z* 'the Dewians, the protectors/commanders'; all. or dat. pl. *busawwñ[-a: a]l-a* 'for the Busans, for the nobility'; dat. pl. *mir-e* ... *trelewñn-e* 'for the commoners, for the Trallians', acc. pl. neut. *wixsab-a lab-a* 'the *w.*, the takings/booty' (note here a rhyming [-aba ... -aba]).

Words in the following list of nouns are mostly cited in the form in which they appear in the appropriate strophes, namely:

nom. sg. (no ending, except *-z* in Trqqiz ‘stormgod’ which is a petrified ending **-(nt)-s*)
acc. sg. (nasalized) *-ã* (var.: *-u* [ũ]), *-ẽ*, *-i* [ĩ]
zero-ending in nom.-acc. sg.; neut. sg. forms may show an auslauting *-m̃* (cf. *masxxm̃*)
nom.-acc. neut pl. or acc. coll. *-a* (or *-ja* after *-a-*)
nom.-acc. pl. *-z*, *-s* (this latter is probably from Lyc. acc. pl. *-s*)
dat. or loc. sg. *-a*, *-e*, *-i*
dat. or loc. pl. *-a*, *-e*
all. (sg. or pl.) *-a* (as in *trqqñt-a* ‘for Trqqiz’, opposed to dat. sg. *trqqñt-i*)
abl.-instr. (sg. or pl.) *-di*
gen. pl. *-ẽ*.

* * *

abr-al-a (acc. pl. neut.) ‘libation(s)’$^{?}$ in the list of offerings to Trqqiz; type of *ã(a)l-a* (= */an-ala/*, after DS; cf. *[a]naz* below), *qrbbl-al-a**, *zb-al-a**; *abra-** may match a PIE noun as in Lat. *ēbrius* ‘drunk’; cf. inf. *ewẽne* ‘to drink’, vb. *uwe-* ‘to drink (gods)’.

abura, *ebura* (nom sg.; acc. sg. *-ã*; also Lyc.) ‘security/enforcers’ (:Greek **éphūra* ‘securement, fortification, siege’), frequently used with loc. pl. *ek-e* ‘in locales’; *ebura* may be the original form: cf. iter. verb *ebur-ẽni-* ‘to secure’$^{?}$ (governs acc. sg. *(e)ri-pss-ẽ*) : Hitt. *e/ipurai-* ‘besiege, dam up; level’, *epur-essar* ‘leveling’ (HED 1-2).

ala, *ali* (nom. sg.), *al-i* (dat. sg.; adj. *ala-si*) ‘nobility, authority, command’; dat. pl. or all. *[a]l-a* in d.41-2 (see sub *busawwñn[-a]* below); to CLuv. *ala/i-* ‘high’.

alb-ã (acc. sg., governed by *pije-* ‘give’) ‘libation, drink(s)’ (for men); cf. verb *alba-* ‘libate’ (acc.: men); possibly to Anat. **alwa-* as in Hitt. *alwa-nz-* ‘being bewitched’; note nom. sg. *(a)lbij-ẽi* ‘libation priest’ (?); built as *ter-ẽi*, with *-ẽi* < **-on-i-*; cf. next.

alb-ãm-a (acc. pl. neut.), syn. to *albã* above; *albm* seems to be a direct obj. as well.

albr-ãn-a (acc. pl. neut.; attr. *trqqñtas-a*), ‘libation vessel (of Trqqiz)’; cf. *albã* above.

_[a]na-z_, _[an]a-z_ (?) (acc. pl.) ‘treats’ (for Trqqiz); cf. DS’s reconstr. _*anala_ for _ã(a)la_; note a CLuv. noun _anā-hit-_ ‘sample, taste’, verb _anā(i)-_ ‘consume’ : Hitt. verb _aniye/a-_ ‘work, carry out, produce, treat’ (Kl. 179ff.). In 55.3, _[a]naz_ is a pendant to _eda(z)_ (?).

apñta-di (abl.-instr., not verb _ta-_ with a preverb _apñ-_ as in DLL) see _epñta-di_ below.

‘are/i-’ DS’s incorrect identification (‘companion’), cited in DLL; see _ẽnari_ below.

arm̃p-ã (acc. sg.) ‘(god) Arma’$^{?}$, probably just ‘god’ (= Trqqiz ?), adj. _(a)rm̃paimi_, _(a)rm̃pali_ ‘divine’ : Lyc. _arm̃ma-_, originally ‘moon’ : CLuw. Arma- ‘moon-god’, etc.

_as-a_ (all. or dat. pl.) ‘for deeds’$^{?}$; not to Lyc. preverb _ese_ as per DS & CM (in DLL), cf. verb _as-xxa-_ ‘to make exist’ (not 1st p. sg. past _‘as-xxa’_ as in DLL); possibly to iter. _es-_ as in _es-tte_ ‘(he) made (a tribute)’, Lyc. _as-_ ‘make’ (or to _*es-_ ‘be, exist’ ?).

asãnã-ml-a (with variants; dat. sg.; once used with an attr. _lusa-si_ ‘fiery’) ‘blood-sacrifice’ as in DLL (:Lyc. _esede-_ ‘blood-’$^{?}$) : CLuv. _āshar-/ashan-_ ‘blood’ : Hitt. _ēshar/ishan-_ ‘blood(shed)’ < PIE _*ésH-r/*esH-án-s_ ‘blood’; cf. _mlez_, _memleje_ below.

atl-i (dat. sg.) ‘for/to himself’ (adj. _atla-si_) : Lyc. _atl/ra-_ ‘person, self’ (DLL) : HLuv. _atari-_ id. (see next); for etymology see TMHR 81ff. (to Hitt. _attes_, OI _ātmán_, etc.).

atr-al-a (acc. coll.) ‘detachment’ (:Lyc. _atl/ra-_ ‘person, self’); syn. _waxsa_; semantically may be very close to Russ. _druzhina._ Pixre asks god(s) to favor [his] _prijãma ... atrala_ (‘excellent detachment’ ?) for protection (dat. pl. _pasñt-e ... [pixre]s-e_ [emend. by DS]). Cf. _a[t]rala-muwa_, a PN (?); see _atl-i_ ‘for/to himself’ and its etymology (above).

_ã(a)l-a_ (< _*an-ala_ as per DS; acc. neut. pl.; treats) see _[a]naz_ and _abr-al-a_, above.

ãzi (nom. sg.) ‘supply’ (vel sim.): treats provided to Lyc. high commander Xerẽi for his guards); this form (text 44) may relate to dat.-loc. pl. (?) _ñz(-e)_ (text 55). These forms may originate from PIE _*h_$_{1}$_nek̂-_ ‘carry, bring’, Lith. _nèšti_, OCS _nes-ti_ ‘carry’, LIV 222f.); in Mil., _*s_ (including that from _*k̂_) is voiced after a sonorant; see next.

‘ãzisse’ is an incorrect entry in DLL; this should be *ãzi: sse* (the original is very clear), two words; see *ãzi* (above) and *ss-e*, *ses-i.*

busa-w{w}ñn[-a] (all. or dat. pl.; case-coordinated with *[a]l-a*) ‘Busans, inhabitants of Busa’ (44d.41-2); apparently, there was a town of Busa in Caria, near Tralles. The sequence *busawwñn[a: a]la* (= *busawñn-a: al-a*) is an appositional construction: both components are nouns (semantically similar: acc. pl. *dewi-s ... zrẽtẽni-z*). See *ala.*

‘ddel-u’ a nonexistent noun in acc. sg. invented by DS to be able to argue that the phrase *lijeiz (dde) lupeliz* is not a direct obj. construction; DS declares *lijeiz ... ‘p<l>eliz’* to be the subj. ‘nymphs of Phellos’ (though the text is *lijeiz dde lupeliz* where *dde* is an adverb, as in Lyc.); he constructs an acc. phrase *qliju xupeliju sebe ‘ddelu’*. - Besides, the action (Xeriga’s funeral) is certainly in Xanthos, not in Phellos.

‘ddelupeliz’ a nonexistent noun, listed in DLL as nom. pl.; cf. acc. pl. *lupeliz* below.

dewi-s (acc. pl.) ‘Dewians’ in an appositive construction *dewis ... zrẽtẽniz*; cf. *zrẽtẽni.*

de-zi (nom. sg.; not dat.-loc. sg. as in DLL) ‘additional/new$^{?}$ delivery’; correctly compared with Lyc. verb *dde-ze-* in DLL (Lyc. *ze-* means ‘put down (a body)’; in martial contexts: ‘kill (a person)’); *de-* = *dde-*; note *zit-i*, *ziw-i*, *zi-psse*; cf. also Mil. *ziu* ‘I’m providing’ (+‘[my] cherished troops with ...’; see text sub *epñta-di*). [Formally, Lyc. *dde-ze-* matches Lyd. *da-ca-*, Lyc. *zza-tije-* Lyd. *ca-ti-*, etc.]

ebi (substantivized adj., to Lyc. *ebi(je)-*, DLL) ‘Local one; That from here’$^{?}$ (=Xeriga).

ebura see *abura* above; cf. *ek-a/ebure* (‘security, guards’, not ‘relatives’; also in Lyc.).

edes(i) (voc. sg.?) ‘offering priest’$^{?}$ (Trqqiz’s speeks to one in 55.4-5); to **ede-* ‘eat’$^{?}$ (if this is correctly identified, *edes(i)* is a syn. to *kuprimesi*); cf. *edije tike*, next.

edije tik-e (adj.and noun in dat. pl.), not *‘dijeti-ke’* (DS); the phrase *edije tik-e* ‘for feast-related treats’$^{?}$ (44c.61) is a precise semantic parallel to 55.8 /*tika adija*/ (rather all. than dat. pl.) which may be seen in *ti: kdi: a* (a mistaken engraving, quite typical for text 55). In both passages, the recipients of the offerings/treats appear as 'Trqqiz's entourage/suite': acc sg. *xrbblatã: trqqñtasi* (in 44c) and all. *trqqñtasa ... xrbbla<ta>* (in 55), respectively. See below, for nouns *xrbblatã*, *tije*, *tike*, *tiu*.

edul-i (dat. sg.) 'for harm/damage' : CLuv. *ādduwa-l-* 'evil' (noun); here also Hitt. *idalu-* (contrary to Mil.-Lyc. and Hitt., CLuvian shows the effects of Čop's Law).

ekãn-ẽ (acc. sg. or gen pl.) 'victim(s)' (in a sacrifice) : Hitt. *āk-/akk-* 'die, be killed', *akkātar/akkann-* 'death'; cf. Lyd. *ak-τa-* 'of the dead' < PIE **Hok-* (not **Hok̂-*) 'die'.

ek-e (loc. pl.) 'in locales' (usually with *a/ebura*, above) : Lyc. *ek-e* id., *ek-i* (loc. sg.); cf. 44d.67-8 *mir(e) eke-di (i)je* 'the [urban] commoners with the peasants ...' (lit. 'with the locales'; cf. *xbadiz* 'Xanthians' < 'river valleys'), as opposed to *qñtra: ilẽne-di (i)je* 'the [urban] nobility/managers with the land-owners ...' (see *ilẽne*). The form *'kedije'* lisited in DLL as an 'adj. in dat.-loc. pl.' is an incorrect identification.

ek-abura, *ekebure* (etc.) see *ek-e* and *ebura*, *abura* above.

****elu-*** (noun), cf. *elu-wi* 'I'm libating' (with acc. *xñab-u* which may refer to Trqqiz); the old Luv.-type ending *-wi* is preserved here since a form ***elu-u* cannot exist in Mil.- Lyc.; cf. PIE **alu-* 'bitter; beer, met' (IEW 33f.; cf. *ālu-*); pendant to *elu-wi* is *alba-xa* 'I have libated', to *alba-* 'libation (for men)' (Xerẽi is speaking in both cases).

epe-qzzi (acc. sg.; a feast), *ppe-[qz]zi* (dat.-loc. sg.) see *qezm̃mi*, *qñza*, *qzze* below.

epñta-di (abl.) in: *muw-i ... epñta-di* 'to/for an invigoration from the takings/spoils' (?); *apñta-di* (instr.$^{?}$) in: *ni-ke dezi: mutala: apñta-di: tetbe-ti: laGra* 'and [there shall be] no additional delivery (nom. sg. *de-zi*) [because] *mutala* may damage the *l.*-stands with$^{?}$ /through$^{?}$ the takings'. Such an interpretation presupposes a material identity of the nouns *de-zi-* and *apñta-*. If the above is correct then *e/ap-ñt-a-* is a cognate of Mil. verbal forms *epe* 'take!' and *ep-di* 'takes' (:Hitt. *ēp-zi* id.; cf. LIV 210f. for a PIE reconstr.); cf. Mil. nouns *pas-ñt-e*, *tid-ñt-a*, *udr-ñt-e*, Lyc. *padr-ñt-a** (:Mil. *pidr-it-ẽni*).

erbb-i (dat. sg.) ‘for the fight(s)’; the same word as in Lyc.; cf. CLuv. *arpa-* ‘strife’ etc. Trqqiz’s epithets *esetesi-ke erbbesi-ke* may mean ‘both peaceful and belligerent’ (CM).

erei-m-e (dat. pl.) ‘to/for the supplies’, abl. *erei[m]e-di* ‘(treats) from the supplies/levy’; to a verbal noun *erei-mi-* < **er(e)i-* ‘lift, raise, levy’ (=Lyc.); related: CLuv. *ari(ya)-* ‘lift’ (participle *ariyamma/i-* ‘lifted, exalted’ is used in onomastics); cf. *zi-(e)reim-e* below. Note other IE languages: Lat. *orior* ‘arise’, etc.

er-ẽ-pl-i (dat.-loc. sg.), *er-ẽpl-e* (dat.-loc. pl.), *er-ẽpli-z* (acc. pl.), ‘vessel(s)/pot(s)’$^{?}$; apparently, stem *ẽpl-* < **m̃-pl-* < **en-plē-* (vel sim.), cf. archaic IE constructions, as Lat. *im-pleō* ‘fill’ (IEW 799; LIV 434 **pleh*$_1$); note *zi-(e)r-ẽpl-e* and *zirãpla* below.

erm-ed-e (loc. sg. or pl.) ‘during an annoncement’ or ‘during announcements’ (vel sim.; syn.: *muxss-a*, *tal-i*, *lel-i*); it seems *ermede* is incorrectly analyzed as a verbal form in *-de* in DLL 115; *erme-* matches a Car. noun *armon* ‘herald’ as per DS (see DLL).

esãnã-ml-a, *esẽnẽ-ml-a* (a compound in dat.-loc. sg.) see *asãna-ml-a* above.

eset-i (dat. sg.) ‘forever’, vel sim.; in 44d.44-5 Trqqiz ‘condemned’ (*zm̃p-de*) ‘a tax of Xeriga’ (acc. sg. *xzzãt-ã* ... *xerigaz-ñ*) ‘forever’ (?); cf. Lyc. *ahat-a* (syn. to Mil. *eset-i*?); note Mil. adj. *esete-si* ‘perpetual’$^{?}$, an epithet of Trqqiz (‘peaceful’ for DS); Lyc. *ehetehi*, *ahataha*; CLuv. possibly a CLuv. divine epithet *assattassi-* < **āss-* ‘remain, abide’ (CLL 35); cf. Mil. *as-a* above (etymology not yet clear).

ẽnari (acc. sg. in 44c.47) ‘Mighty one’, one of Xerẽi’s epithets (in Mil. texts neither the commander/ruler Xerẽi nor the Lyc. capital Arñna is mentioned by name; cf. *ñtuwitẽni*, *tunewñni*, *zrẽtẽni* below). There is no Mil. *‘ẽn(e) ari’* (DLL 116), only *ẽnari* with a clear function in the appropriate passage (Xerẽi wins a fight against Amorges with the help of two Lyc. gods); *ẽnari* matches precisely CLuv. adj. *annari-* ‘foceful, virile’.

ẽne/i-* ‘mother’ (= Lyc.), cf. adj. *ẽnesi* (dat. sg.) : Luv. *ānna/i-*, Hitt. *anna-* ‘mother’.

ẽtr-e (dat. pl.) ‘to the lower ones’, substantivized adj. : Lyc. *ẽtre/i-* ‘lower’ < **anda-ra-*.

ikete/i-* (a noun), cf. adverb < adj. *ikete-si* ‘accordingly’ (vel sim.); used twice in a conjunction *s(e) iketesi* ‘and, accordingly’ (connects two direct objects); cf. Lyc. *ike-zi.*

ilẽne (nom. sg.; *-ẽn-* < **-enn-* or **-onn-*) ‘land-owners, rural nobility’$^{?}$; a coll. meaning, opposed to *qñtra* ‘urban nobility’$^{?}$; instr. *ilẽne-di* ‘with the land-owners’ (‘dat.-loc. pl. *ilẽnedije*’ is an incorrect identification in DLL); if *ilẽne* < **il-esn-*, it may match Hitt. *il-essar-/il-esn-* ‘sign; importance’ < unclear verb **ilai-* (HED 1-2).

kapsa-q-ẽ (acc. sg. with a suff./stem *-qe-*) ‘small things, portions’$^{?}$; Pixre gives/presents (verb *pi-na-*) them for a distribution to people. Cf. noun in dat. sg. *km̃-q-i*, possibly to *km̃-qe-**. - Mil. stem *kaps-a-* may well match a Hitt. noun *kappis-* ‘portion’. Cf. also Hitt. *kappi-/kappai-* ‘small, little’ : Lyd. gloss in Gr. *kambein* ‘grandchild’ (Kl.; for phonetics cf. Mil. *lupe-li-* ‘sad’ : CLuv. noun *lupp-asti-*, *lump-asti-* ‘regret’, CLL).

kãtd-q-ẽ (gen. pl.; produce for Trqqiz; noun *kãt<a>-qe-** ?); possibly to Hitt. *kant-* ‘wheat’; a part of a chiasmic structure with two, grammatically and semantically interrelated, gen.-pl. forms *kãt<a>q-ẽ ... kuprim-ẽ* (55.2-3); cf. *kuprimesi* & *kapsaqẽ.*

[k]em(i) (?) ‘tight-fisted one’$^{?}$, subj. in the strophe 44d.V where ‘Trqqiz is angry (*stt[ẽ]ni*) & all gods’ since a *[k]em(i)* ‘doesn’t determine a victim of choice for Zeus’ (*neu: zin-i ... ekãn-ẽ: kuprimi: pzzi-ti ...*, MZL 35); adj. *kemi(je)-* ‘pressing, rallying’$^{?}$, about warriors, rallying around Xerẽi: *kemije-di: waxssa-di: zrqqi-ti* ‘(he = Xerẽi) is rushing with the pressing/rallying guards [during a sudden enemy attack]’ < PIE verb **kem-* ‘press’; cf. *km̃masa-di*; note Lyc. *km̃me/i-* ‘all’ < PIE **kom-ó-* (DLL 32).

ker-i (1) (dat. sg.) ‘to the [capital] City/Urbi’$^{?}$ (about Xerẽi, bringing his warriors back to Arñna-Xanthos after each of 36 raids/fights); *ker-e* (loc. pl. = Lyc. *ter-e*) ‘in cities’ (about Xeriga, not supervising tribute-delivery in various cities [whereas Xerẽi does precisely this]; MZL 30f.); to Hitt. *kuer-* ‘to cut’ < PIE **k^{w}er-* id.; related to *keri* (2) ?

keri (2) (acc. sg.) ‘a *keri*-feast’ for Lyc. men *(trm̃mil-e ... pis-e)*; governed by imp. 2nd p. sg. *xup[di]* ‘pile up!’. This *keri*-feast is to be served ‘in three portions/courses’: dat.-loc. sg. *trei xal-i* (:Hitt. *hali-* ‘ration, portion’; *trija* in 55?), exactly as *warasije-z* (acc. pl., governed by a 3rd p. sg. imp. *xupdi-du*), though this latter event has to take place 'thrice' (= *trisu*; thus, for 3 days ?). For *xup-d-i-* cf. Hitt. *hupp-* 'hurl, throw' (+ acc. obj.), noun *hūppa-* 'heap' (a PIE root); we seem to deal with a stem, based on a noun **xup-id-*, cf. *mrGGd-* < **mrGG-id-* (a sepulcher protected by the *mrGGa*-deities ?); *qel-id-* 'preservation/harvest'?; *wis-id-* 'drinking party'? (:acc. *wisi-u* 'beer'/'wine'). Both *xupdi*-governed acc. objects, *keri* and *warasijez*, may refer to a variety of treats.

klleima (acc. pl. neut.) 'payment(s), tribute', *sm̃mẽt-e klleim-e* (dat. pl.) 'for binding/obligatory payments', etc. : Lyc. verb *ttl(e)i-* 'pay' (DLL); origin not clear.

km̃ma-sa-di (noun in instr., with attr. *qereime-di*) 'trifles', lit. '(any) small details': 55.2 *km̃ma-sa-di* ... *qereime-di* '(I didn't narrate/report to the river-gods [any] quarrel) with raid-related trifles'; cf. expressions of the type 'the little nothings ...', 'petty details ...'; see sub *qere/i-** 'raid'? below. Cf. Lyc. *km̃me-* 'whole, all' <PIE **kom-ó-* (DLL 32 & 118). Cf. *[k]em(i)*, *kemije-di*, *km̃-q-i*, *ner-e*; *xlus-ã* 'quarrel'; *leli-* 'narrate'.

km̃-q-i (dat. sg., pendant to *erbb-i*) 'for raid(s)'; cf. possibly related words *km̃m-asa-* and *kem-ije-*; *km̃-q-i* may show suff./stem *-qe-*, cf. *kapsa-qe-**, *kãt<a>-qe-** (?); note also 44d.1 *etr-qqi*, though this may be a denom. verb (2nd p. sg. imp.); note an opposition: verbal stems in *-i-* (of the type *m̃qr-i̱-* 'to apportion', iter. *m̃qris-*, verbal noun *m̃qr-i-mi-* 'apportioning') vs nominal stems in *-e-* (*m̃qr-e̱-* 'portion'), etc.

k<ñ>ta (DS's emend. for *kzta*) 'illumination, torch-lights' (?), or 'burning, fire' (?), syn. *kñtr-e* (loc. sg. or pl.); both times in offering-related contexts (as several other Mil. words with the meaning 'burn', 'burning', 'fiery'; cf. **lusa-* below). Cf. PIE **kand-* 'shine, glow', nouns **kando-* (> Mil. */kñta/* ?) and **kand-ro-* 'glow(ing)' (> Mil. *kñtre* ?) as preserved in OI *candati*, Lat. *candeō*; OI *candra-*: cf. IEW 526 (OI, Gr., Alb., Lat., Celt.; note here also Celt. noun **kando-*).

kres-e (dat. pl. [or sg.?]) 'troops, warriors', poosibly to **krs-* as in CLuv. and Hitt. *kars-* 'cut', Lyd. *fa-karse-* id. < PIE **krs-* id. (EDHIL 454f.; for phonetics cf. Mil. toponym *Kridesi* vs Lyc. *Kerθθi* < **kerdesi* < **krd-esi*). In this text, the storm god Trqqiz seems to urge Xeriga not to give alcoholic drinks to warriors (*kres-e*) who have just come back 'from raids, from fights' (abl. *pre-di ... laxa-di*, 44c.V). – Cf. Lyc. PN *Krehẽ-nube* and Isaur.-Cilic. PN in Greek version *Kresa-ouestis* where the 2nd stem probably matches Luv. *-wasti-* 'pledge' (Naming IV.5.1.1). Altern.: *kres-e* 'dur. fights'.

kuli (acc. sing., with attr. *mruwa-si*) 'detachment' : CLuv *ku(wa)lan-* 'army'; Mil. *kuli ... mruwasi* (55) matches acc. coll. *pad(-a) mruwas-a* (55) 'derachment of the stele'; *pad(a)* seems to be built as _saba*_ (see below); cf. *mruwa-*.

kuprime-si (nom. sg.) 'offering priest'$^{?}$ (built as *edes(i)* id.), cf. *kuprimi* (participle or noun) 'choice(-related)' < *kupri-* 'to favor' (see DLL) < PIE _*kup-ro-_ 'desire' (as in Celt.; IEW 596); in 44c.46-8, god Natri of Turaxssa favors (*kupri-ti*) the *ẽnari* ('Mighty one' = Xerẽi), whereas god Natri of Kaunos (*xbide-wñni*) saves (*puke-ti*) the *zrẽtẽni* ('Protecor' = Xerẽi) from killing/killers (abl. *ulaxa-di*; 'killers' as per IY.)

kup-ttl-e (dat. pl.) 'to/for the cooks' < _*kuppa-ttalla_$^{?}$ to PIE _*kweh_$_1$_p-_ 'to boil' (if we follow LIV 334 reconstructions precisely); in 44d.37-9, Xerẽi gives a harvest$^{?}$-related libation (acc. *qelideli: albã*) to the cooks during a *qezm̃mi*-feast; cf. Mil. *mu-tala.*

kzta see *k<ñ>ta* and *kñtre* above (both words seem to denote illumination).

lab-a (acc. pl. neut.) 'takings, spoils, booty' (syn. *lajata*) : *lelebe-di* (abl.) 'from spoils', probably to PIE _*labh-_ 'grab' (cf. sub _*lembh-_, LIV 369f.); cf. *lebi, lbbeweli.*

__*lada-**__ 'wife' (frequent in Lyc.) in *xba-lada-* 'Lady Hebat'$^{?}$; see *xba-lad-ã* below.

laGr-a (acc. pl. neut.), *laGr-i* (dat.-loc. sg.) 'offering/libation-stand' (vel sim.) : Hitt. *lāhura-* (mostly, *lahhura-*) id., to *lāhu-* 'pour' (for phonetics see CM in: Proceedings of the 22nd Annual UCLA IE Conference, 2011, 129).

laja-t-a (acc neut. pl.; built as *zata*; cf. syn. *laba* above) 'takings, spoils', to *la-* 'take' (CM agrees that Mil.-Lyc. verb *la-* means 'take', and not 'release') : CLuv. *lā-* 'take'.

laxa-di (abl.; instr.) 'from fights' [a pendant to *pre-di* 'from raids'$^{?}$; cf. dat. sg. *erbbi km̃qi-ke* 'for fight(s) and for raid(s)', vel sim.]; *qidri-di laxa-di* '(if someone) rushes with fight(s)/attack(s)' [contrary to Kl. 510, there is no

Mil. *lax-* 'to strike'] : Hitt. all. sg. *lāhh-a* 'military campaign', CLuv. *lahhiya-* 'journey, campaign' < PIE **laH-*; not related to *ula-xa-di* 'from killing/killers' (abl.; see below).

lbbe-we-* (noun like *tulije-we-* or *zi-we*; *-we-* < **-war*) 'takings', seen in an adj. *lbbewe-l-i* (dat. sg.; attr. to *erbb-i kñ̃q-i(-ke)*); cf. *laba*, *lebi*; *[k]em(i)*, *km̃qi*.

lbij-ẽi (nom. sg.; type: *ter-ẽi*; suff. *-ẽi* < **-on-i*) = *(a)lbijẽi* 'libation priest'$^{?}$ (syn. *weri*), probably to *alba-* 'libate; libation' (see above) [scarcely to *lebi*, *lbbeweil* (next)].

lebi (acc. sg. 'taker'?), *lelebe-di* (instr.) 'from takings'; see *laba* and *lbbe-we-** above.

leli (acc. sg.; possibly, loc. sg.) 'speech; engraved text', dat.-loc. pl. *lle* = *l(e)l-e* in: *lle terbl-ẽ* 'breaking/damage (acc sg. *t.*) in the engraved text' [refers to Pixre's inscription 55 on the socle of a sarcophagus]; cf. verbal form *ne leli-xa* 'I didn't narrate' (Pixre addresses the river-deties) : Lyc. participle *laλ-ẽn-s* 'speaking' (iter.; cf. Mil. *-ẽni-*) : HLuv. **lalanti-* 'language' : CLuv. *lāla/i-* 'tongue, gossip' : Hitt. *lāla-* 'tongue, speech' (onomatopoetic, as in other IE languages). - See for more details acc. sg. *terblẽ* below.

lẽpr-i (loc. sg., - or adverb *lẽpri*, 44d.27) 'in time' or 'instantly' (an adj. *'lẽprija'* listed in DLL is not supported by the context): *ker[i] lẽpri-j-asxxa* 'realize/make (imp. 2nd p. sg. *as-xx-a* to *asa*, as *mrss-x-a-* to **mrssa*; see below) the *keri*-feast (= *keri* (2)) in time!'; to Hitt. *lammar* 'instant'; 'instantly' (adv.); incorrect: *'ker[b]lẽ prijasxxa'* (DS).

lijaiz, *lijeiz* (acc. pl.) 'nymphs', to Lyc. *elijãna-* 'nymph' (< *'having water'$^{?}$, as per H. Eichner), cf. Mil. *lijenuwe-* 'nymphad'; cf. also **lupa/e-* and *'ddelu'*. - Note WNG.

lijenuw-i (dat. sg), *lijenuwe-z* (acc. pl.) 'nymphad'; see *lijaiz*; note *lijeji-z ... lupeli-z*.

lupa/e-* 'grief, sorrow' (rather *lupa-* than *lupe-*), cf. adj. *lupe-li-* 'greving' in 44d.59-60 *qliju: xupeliju: sebe lijeiz: dde lupeliz: ni-uwe: lugãtu* 'let them not burn (*ni lugãtu*, to HLuv. *luha-*) the funerary (*x.*) outfit (*q.*) and the sad/grieving nymphs ...': about Xeriga's funeral (details in WNG); *lupe-li-* 'sad, grieving' : CLuv. *lupp-asti-* 'regret'.

luwa-dla-di (abl., with attr. *qereime-di*) ‘breackage’, vel sim.; see *qere/i-**.

lusa-* ‘fire, burning’, cf. *lusa-s-i esãnã-ml-a* (dat.-loc. sg. adj. + noun) ‘at/during the fiery blood-sacrifice’; all. *lusali-ja zẽn-a* ‘for a fiery dedication/broiling$^{?}$’ : HLuw. verb *lus-lus-* ‘burn’, adj. *luza-li-* ‘sacrificial (of burning)’ < PIE **leuk̂-* (a var. of **leuk-*) ‘burn’ : Hitt. *lukk-iye/a-* ‘to set fire to’. See *asãn-ãml-a, zẽn-a.*

****mad-ra-*** (noun) ‘meeting, assemblage’ [type: **alb-ra-* ?] < PIE **mōd-(V)r-*) < verb **mōd-* ‘meet’; cf. Mil. inf. *madra-ne* [55.1: Pixre promises to regularly ‘assemble’ the Phellian nymphs (acc. *pleliz ... lijaiz*) in the nymphad *lijenuw-i* for treats]; note WNG.

marãz (acc. pl., common gender, with attr. *urtu(wã)z* ‘tribute/tax-related’) ‘laws, rules’ : Lyc. *mara* (neut. pl.); oblique stem Mil.-Lyc. *mere-*; Mil. *prijẽ meri* may mean ‘(if one violates) the foremost$^{?}$ (acc. sg. *prijẽ*) in the law (loc. sg. *mer-i*)’; cf. Mil. abl.-instr. *mere-di* and Lyc. *mara-za* ‘arbitrator’, built as *zxxa-za-* ‘warrior’. See *urtu-*.

masa ‘gods’ (acc. coll.), nom. sg. *masaiz*, adj. *masa-si-* ‘of gods; divine’ : Lyc. *mahãna-* ‘god’, nom. pl. *mahãi*, adj. *mahãna-hi-*. Cf. Mil.-type PN *masa-uwẽti.* ***masxxm̃*** (acc. sg. neut., introduced by *-de*) ‘grant’ (products to be used for major feasts) : (?) Hitt. noun *maska(n)-* ‘atonement, payment, bribe (given to officials), gift’, verb *mask-isk-* ‘give presents’$^{?}$; note Mil. *-sxx-* < **-sk-*; cf. Lyc. *exbura-* < *ekebura-*.

maw-il-i (nom. sg., built as *qñtili, pttili*) ‘security’ (possibly, a police-like unit of Xerẽi) : verb *mawa-* ‘(re)move’ (with acc. obj. *mlu* ‘pledge/power’; *klleima* ‘payments’) : Hitt. *mu-miye-*, *mau-s-* ‘fall’ : Toch. AB *mu-sk-* ‘get lost’ : Lat. *moveō* ‘move’, etc.

medu (acc. sg. of *medu**, as *mlu* of *mlu**) = CLuv. *maddu* ‘wine’, cf. Lyc. *medbije-* : CLuv. adj. *madduwiya-* [note lack of Čop’s Law in Mil.-Lyc.]; Mil. *medu* is governed by an imp. 2nd p. sg. *tu* ‘put, place!’ as also *wisiu* ‘beer’ (or ‘wine’?), *tesẽni* (a dish), *xezm̃* (see *qezm̃mi*); for *tu-* cf. Mil.-Lyc. iter. verb *tu-s-* and Lyc. *tuwe-* ‘put, place’.

mire (nom. sg.; dat. sg. or pl.) ‘(urban) commoners’ (as opposed to *eke* ‘peasants’, lit. ‘locales’; cf. *xbadiz* ‘Xanthians’ < ‘river valleys’); cf. adj. in dat. pl. *mirẽñn-e*, prabably, ‘pertaining to *mire*’ (*mire* seems to never refer to military men); may be akin to Lyc. *miñti* ‘assembly of adult men' : Hitt. *mayant-* 'adult, powerful', but also 'young' < 'growing', to *mai-/mi-* 'grow' (a PIE root).

mla-t-i (loc. sg.) 'in the agora' (?), location of tribute-deliveries, offerings, feasts' (in 55, the word *qel-ei* is used: 'at the preservation/collection place', vel sim.); stem *mla-* may be seen in Lyc. *mlatra-za* (a priest); cf. possibly the 2nd stem in Mil. *asãnã-mla* 'blood-sacrifice' (a major celebration; see DLL). Cf. *me-mleje* and *mle-* (1), next.

mle- (1) in acc. pl. *mlez* (some treats, given to *mir-e ... trelewñn-e* 'commoners Trallians', an appositive construction); adj. in dat.-loc. pl. *me-mleje* [attr. to *udrñte* 'offerings', *u-dr-* (:Hitt. *u-dai-* 'bring here') vs *pa-dr-* (:Hitt. *pe-dai-* 'carry'); see Mil. noun *pidr-it-ẽni* below]. Cf. also a subj. phrase *ñte-mle-si ... (a)lbijẽi* 'libation-priest (*a.*) of *ñtemle-*' ('altar' or 'sanctuary'). Note a formal match Mil. *(ñte-)mlesi* : CLuv. *malha-ssa-* 'ritual, sacrifice'; possibly to _*m(e)lH-_ 'grind'; cf. *e/asãnã-ml-a*, *mla-t-i.*

mle- (2) 'priest'$^{?}$ in gen. pl. *ml-ẽ* in a subject phrase *ali-ke mlẽ mire-ke mlẽ* 'both the supervisers of [=among] the priests and the commoners of [=among] the priests (have apportioned the *pruwa* for distributions [*ut-e*] at a libation party$^{?}$ [*wis-id-i*])'. Cf. 44d.68: *mire (e)ke-di ... qñtra ilẽne-di* 'both the commoners with the peasants [and] the managers with the land-owners (have apportioned the *masxxm̃*-grant for distributions [at a major feast])'; acc. pl. neut. *pruwa* matches functionally acc. sg. neut. *masxxm̃* 'grant'. – Mil. nom./acc. pl. *mlẽz** 'priests' may egual Car. nom.-acc. pl. *molš* 'priests' (CM) < _*malla-nzi_ (nom. pl.), _*malla-nza_ (acc. pl) <PIE _*meldh-_ 'proclaim'.

mlu (acc. sg.; not to *mla-*, *mle-*) 'pledge', cf. PIE _*mleuH-_ 'speak', Russ. noun *molva* 'report, rumor, gossip'.

mñnu-sa-* (:Lyc. PN *eri-mñnuha*) noun seen in an attr., in the acc. pl. neut. phrase *m̃nnu-sã-ma ... lajata* 'remarkable$^{?}$ takings/spoils', possibly akin to a CLuv. noun *mannahuwanni-/mannawanni-* (part of the face), cf. CLuv. *ma-mmanna-* 'regard with favor', *manā-* 'look at, see', Hitt. *mēna-* 'face'. Note also CLuv. nouns *mannu-/mannauwa-* '?' and _*mannu-st(a)rra/i-_ 'quality of *mannu-*': a meaning 'remarkable, grandiose' (vel sim.) seems to be suggested by the context (CLL 138f.; St. 396f.).

mrGGa-s (acc. pl.; expected: **mrGGãz*; cf. also *mrGGd-i*) 'Dark deities (of the Netherworld)', cf. *kuli mruwasi* 'detachment of the stele', *pad(a) mruwasa* id., *sabaka qetbeleima* 'fight-winning$^?$ guards/patrol (*s.*)': divine units who protect (royal) sepulchers : Hitt. *Margwaya-*, CLuv. *Marwa-* deities < PIE **merg*^{w}- 'dark'; cf. next.

mrGG-d-i < (?) **mrGG-id-i* (loc. sg.) 'at the sepulcher (protected by the *mrGGa-* deities)'; 3 such monuments appear in TL 44c-d: that of Xerẽi; that of Xeriga; that of Pixre. Cf. suffix *(*)-id-* in a verb *xup-d-i-* 'pile up' (< Anat. **hupp-id-*) and in nouns *qel-id-* 'preservation/collection/harvest'$^?$, *wis-id-* 'libation party'$^?$ (:acc. sg. *wisi-u* 'beer' or 'wine' vs a CLuv. verb *wisi-/wisai-* 'press', Hitt. *wis-ur-iya-* id.). Cf. Lyd. *Mariwd-a-* (< **mr(g)w-id-*), a tomb-protecting deity. See acc. pl. *mrGGa-s* above.

mrss-x-ã (acc. sg., used with attr. *urtu*) '(tribute) cheater': subject to a punishment by Trqqiz; cf. verb *mrsxxa-ti* '(he) cheats/violates' : Hitt. *mars-ahh-*, *marsa-nu-* 'desecrate', *mars-ant-* 'deceitful, dishonest', CLuw. *marsa-* 'trachery', all to PIE **mrso-* (but not to PIE **mers-* 'forget'); cf. Kl. 562.

mruwa-* 'stele' (as in Lyd.), cf. adj. *mruwa-si* (acc. sg.), *mru[w]a-sa* (acc. pl. neut.) 'pertaining to the stele'; cf. *kuli* 'detachment' and *pad(a)* id.

mul-ẽn-i (acc. sg.; cf. acc. sg. *tes-ẽn-i*, a dish), probably, some alcoholic drink (given 'to the lower ones': dat. pl. *ẽtr-e*), lit. 'strengthening' (?); cf. Lyc. PN *Mullijese* to **muwalli-* 'strong' (DLL 99); note *muw-i*, *mu-tala*, *a[t]rala-muwa*; *muri.*

mur-i (dat. sg.) 'for a libation party'$^?$ (syn. *wis-id-i*), cf. acc. sg. *tuwi ... murei* '*muri*-related feast (for Xerẽl's guards: *waxs-a*)', iter. verb *mur-ẽn-e-* 'invigorate'$^?$ (governs a direct obj., denoting both the Tuburan high commanders and the Xanthian royalty); note that *mur-ẽn-e-di* is a verbal form (not nominal); cf. verbs *qel-ẽn-e-*, *trbb-ẽn-i-*.

mu-tala (nom. sg.) 'mighty one'$^?$ (a subj., not 'nom.-acc. pl. neut'), precisely to CLuv. *muwa-ttalla/i-* 'mighty'; cf. *a[t]rala-muwa*, *muw-i*, *kup-ttl-e*; cf. Lyc. PN *mu-tl-ẽi.*

muw-i (dat. sg.) 'for invigoration'$^?$ (cf. *murẽne-* 'invigorate' sub *mur-i*): Xerẽi took (*la-de*) 'both the command and the troops' (*ali ... sebe pasbã*) for *muw-i* after a successful battle (against Amorges?). Cf. CLuv. *muwa-*

‘might’, *mu-muwa-* ‘invigorate’. There is no ‘noun *muwilade*’ (cf. verb *la-de* above). - Cf. also *mu-tala, a[t]rala-muwa.*

muxss-a (dat.-loc. pl.?) ‘during an invocation’$^{?}$ (about a *qezm̃mi*-feast), cf. Hitt. noun *mukessar* which has been explained by CM as originating from PIE **meuk-* ‘be pointed’ (via ‘goad’ [obj.: cattle] > ‘urge’ [obj.: gods]; see Orientalia 2010, 213ff.).

m̃qre- (noun; cf. iter. verb *m̃qri-s-*) ‘portion’ (+ *ute* ‘for distribution(s)’), about treats for people & deities; cf. verbal noun *m̃qri-mi-* ‘apportionning’ (‘*m̃qreime*’ doesn’t exist; we may have *m̃qr[e: e]reime*); stem frequently used in Mil.; origin still unclear.

ner-e (dat. pl.) ‘river-deities’, possibly to PIE **nerH-* ‘dive’ (cf. names *Nereus, Nereid*); cf. adj. in a direct-object phrase *mlu neriu* ‘river-deities-related pledge’; cf. *mlu.*

‘nestte’ (noun) misinterpretation for *(e)ne* ‘this’ (acc. pron., introducing a direct obj. *urtu qelideli* ‘presevation/harvest-related (*q.*) tribute’) + verbal form *es-tte* ‘(he) made’.

ñneri (nom. sg.; with attr. *(a)rm̃paimi* ‘divine’$^{?}$) may mean originally ‘protector, remover (of evil)’ (type of Mil. *maw-il-ĩ*), cf. Late Anat. (possibly, Lyc.) PN **Zum̃mẽ-ñneri*, Lyc. sentence *zum̃mẽ ñne-ti* ‘(one) will remove evil/harm’ (acc. sg. *zum̃m-ẽ*).

ñtad-a, *ñtet-e* (loc. pl.) ‘at the tombs’ as a location of celebrations and tribute-deliveries; cf. possibly *plejeres-e [xu]p-e* (see *xupeliju* below); to Lyc. *ñtat-a* (loc. sg., DLL 45) ‘burial chamber’; a *t/d*-variation was widespread in Mil.; *ñta/e-* is akin to *ñte* ‘inside; then, thereafter’, cf. CLuv. *anta* ‘in(to)’, Hitt. *anda* ‘in(to), inwards; in addition’; stem *-da* matches Mil. verb *da-* ‘put, place’ (only in TL 55) and Lyc. *ta-* id., to Hitt. verb *dai-/ti-* ‘lay, put, place’ (< PIE **dheH-* id.). Cf. *ute, udrñte.*

ñte-mle-* (noun; adj. *ñtemle-si*) ‘sacrificial installation’ (cf. Lyc.); cf. *ñtad-a, mle-* (1).

ñtuw-it-ẽni (nom. sg.) a high commander (mostly, Xerẽi) : Lyc. dat. pl. *ñtuwe-ri-h-a* ‘commanders’ (as opposed to *zxxa-z-a,* regular ‘warriors’); similarly built: Mil. *pidr-it-ẽni* ‘Provider’ (= Trqqiz ?), *zr-ẽt-ẽni* ‘Protecor’ (Xerẽi’s title). Note Hitt. neut. noun *antu-* ‘goods’ (vel sim.) in *antuwa-s-*

alli- (built as *sapas-alli-* ??), a title of a high-court official (cf. HED 1-2, 84f.), to CLuw. adj. *antuwa-ssa/i-* (CLL 19).

pad(a) (acc. pl. neut., with attr. *mruwa-sa* ‘of the stele’) ‘detachment’, cf. acc. sg. *kuli ... mruwasi* ‘detachment of the stele’ in 55, - possibly, a group of protecting deities; cf. also acc. coll. *sabaka qetbeleima* (constructed as *pad(a) mruwasa*), acc. pl. *mrGGa-s*, and loc. sg. *mrGG-d-i.* It seems, Mil. *pad(a)* (*‘foot-soldiers’$^?$; probably built as *sab-a*, also a collective notion) is related to a Lyc. noun, represented by instr. *pede-di* ‘with the feet’; cf. Hitt. *pāt-/pat-*, *pata-* [pada] ‘foot’ < PIE **pod-/*pd-* id.

****padur-*** (noun); cf. verbs *pdur-a-* ‘bring’, *pad-re-* ‘provide’ and a noun *pidr-it-ẽni* (*‘Provider’?) vs CLuv. **paddur-* (possibly, ‘tray’). Cf. further Lyc. noun *padr-ñt-a-**; this latter matches Mil. *udr-ñt-e* (dat. pl. in *-e*, type *pas-ñt-e*) ‘for (offering-related, *memleje*) deliveries’ in an offering description; cf. Hitt. *pe-da-* ‘carry’ vs. *u-da-* ‘bring’. Note that Mil.-Lyc. cognates of CLuv. **paddur-* are not affected by Čop’s Law.

palar-ã (acc. sg., with attr. *wzzaijesi*) a vessel$^?$ for offerings; cf. *zaw-a ... palaraim-a.*

pas-b-ã with variants (acc. sg.) ‘troops’, cf. adj. *pasba-si*; related to *pas-ñt-e*, next.

pas-ñt-e (dat. pl., with attr. *[pixre]s-e* ‘of Pixre’; emend. by DS) ‘for protection’, to Hitt. *pahs-* ‘protect, guard, defend’ < PIE **paH-s-* id., built as *tid-ñt-a* ‘for drinks’.

pidr-it-ẽni (nom. sg.) ‘Provider’ (?), possibly, Trqqiz; built as *ñtuw-it-ẽni* ‘high commander’ (= Xerẽi), *zrẽt-ẽni* ‘Protector’ (= Xerẽi); cf. Lyc. *padr-ñta-** ‘provision’ (??), built as Mil. *tid-ñt-a* ‘for drinks/libation’ (:Lyc. root *tidei-* ‘suckle’), *udr-ñt-e* ‘for presentations’ (lit. ‘bringings’, about a sacrifice for Trqqiz and other gods), *pas-ñt-e* ‘for protection’; the stem *padr-/pidr-* relates to Mil. verbs *padre-* & *pdura-*; see **padur-*.

piga-* (noun) ‘splendor, luminescence’ < PIE **bhēH-* (Mil.-Lyc. *i* < **ē*) in all. sg. *piga-s-a* ‘spendid’, about Trqqiz as ‘stormgod of lightning’ (matches all. *trqqñt-a*, 55; cf. *[xrssẽn-i]*): probably to *piga-si-** : HLuv. *pihā-* : CLuv. *piha-ssa/i-*, epithet of the stormgod : Anat. names starting with *Piha-*; Lyc. *Pigesere, Pixm̃ma* : CLuv. *pihaimmi-*, *pihammi-* <

**pi:hamma/i-* ‘resplendid; mighty’ (CM). Mil. PN *Pixre* < **bhēH-ro-* (CM), Lyc. *Pigrẽi* (component *-ẽi* < **-on-i*), etc.

pijanuw-a ‘for payment(s)’ (to *pije-*) or *lijanuw-a* ‘for the nymphad’ (all. sg.) in 55.

pis-e (dat. pl.) in *trm̃mil-e ... pis-e* ‘for Lyc. men’ (about a *keri*-feast) : Hitt. pl.-stem with *-i-*, namely, *pisen-*, as in nom. pl. *pisenes* ‘men’. Mil. dat. pl. *pis-e* is comparable to dat.-loc. pl. *tss-e* ‘at/for the meal stands/tables’ vs Lyc. noun *θθẽ* (nom.-acc. sg.) ‘place of sacrifice, altar’ (CM), so a Mil. nom. sg. *pisẽ** or *pesẽ** would match an underlying Hitt. nom. sg. **pésas* ‘man’ < PIE nom. sg. **pés-ōn-s* (Mil. *ẽ* < **ōn/m*); cf. Kl. 670; the Hitt. ‘man’-word originates from a PIE word for ‘penis’ (Lat. *pēnis*, etc.).

plejer-ẽ (acc. sg.) ‘variety, plenty’$^{?}$: tribute given to Xerẽi in Tralles where he was collecting taxes and awarding people; cf. loc. pl. *plejere-s-e [xu]p-e* (the latter word is certainly a noun) ‘at the spacious tombs’$^{?}$; possibly to CLuv. *palhaya-* ‘wide, broad’ (cf. Lyc. *plm̃ma-* : CLuv. *palhamma-*), to CLuv. *palha-* ‘make flat, spread out’ (<PIE).

pleli-z (voc. pl., formally matches nom./acc. sg.) ‘Phellians’; adj. *pleli-z* ‘of Phellos’ in acc. [not nom.] pl. *pleliz ... lijaiz* ‘Phelian nymphs’, cf. *lijeiz ... lupeliz.*

plluw-i (dat. sg.) ‘for abundance’ (?) in 55.7 *mlu xra-u plluw-i: <t>ut-a* (Pixre speaking) ‘I’ll keep a pledge for abundance to [my] kin’ (vel sim.); cf. *mlu* and *tutasiz.* Noun *pllu-we-** ‘abundance’ is built as *zi-we-** ‘delivery’ (loc. sg. *zi-w-i*), *lbbe-we-** ‘booty’ (in adj. *lbbewe-li*), *tulije-we-** ‘assembly’ (dat. sg. *tulije-w-i*), etc.; cf. PIE **pelu-* ‘plenty’ as in Lith. *pilus* ‘in abundance’, etc. (IEW 800).

pre-di (abl.) in *pre-di ... laxa-di* ‘from raids$^{?}$ [and] from fights’: about warriors coming home; cf. verbal form *pre-te* ‘(he) was galopping (from fights thrice-twelve times)’ (about *zrẽtẽni*-Xerẽi), to Lyc. *pa-bra-*, CLuv. *pa-pra-*, *para-*, *parh(a)-* ‘drive, chase’, similar: Hitt. *parh-* (cf. DLL 125; Kl. 634f.; Kl. compares OI *bhar-* ‘move rapidly’).

prij-ẽ (acc. sg. ?), either a noun (DLL 125) or an adj. in a phrase 55.1 *(e)bu-di* (verb) ... *prij-ẽ: mer-i: zi-pss-e* (loc. sg.) ‘(if one) violates/blocks the foremost in the law (loc. sg. *mer-i*) during a tribute-delivery ...'; cf. adj. *prijeli-*, *prijãmi-*; adv. *pri* '(at) first'.

pruw-a (acc. neut. pl.; used similarly to *masxxm̃*) some grant, obj. of an iterative verb *t-m̃qr-is-* 'apportion for distribution (at a libation-party$^{?}$: *wisid-i*)'; *pruwa* may be related to an adj. *pru-x-ssi*, dat.-loc. sg., attr. to *ppe-qzzi*, a feast; cf. *epe-qzzi*, *qezm̃mi*.

pss-ẽ (gen. pl.) 'of deliveries/payments' (cf. acc. sg. *eri-pss-ẽ* 'tribute-delivery', syn.: loc. sg. or pl. *zi-pss-e* 'during produce-delivery') : iter. verb *pssa-* 'give, pay, deliver' : CLuv. iter. *pi-pissa-* 'give', to **pi-piya-*, Mil.-Lyc. *pi-bije-*, *pije-* 'give' (PIE **bhei-* ?).

ptt-il-i (dat. sg.; built as *qñt-il-i*, *maw-il-i*) 'for swiftness' (pendant to *xustt-i ... qidral-a*) : Hitt. *pattai-/patti-* 'run, race, flee, fly', adj. *pattiyali-* 'swift' < PIE **petH-* 'to fly'.

punãma-da-* 'totality' in *km̃mẽti* (acc. sg.) *punãma-de-di* (abl.) 'everything/however-much from the whole' (governed by iter. *trbb-ẽn-i-* 'deliver'): Xerẽi urges his vassals to regularly (yearly?) deliver a plenty from various products 'for a blood-ofering' (rite). Cf. adj. *punamadije-* 'total' in instr. *punamadije-di ... tuxara-di* 'with a total burning/ fumigation', in a rite instruction formulated by Pixre (cf. noun *tuxara-* below). Similar in Lyc. (*punãma-* 'totality') and CLuv. (*pūnata/i-* 'all'); appears also in HLuv.

pure-s-e (dat. pl. in 55.4) 'to (priests-)purifiers' or 'for purification(s)' (about tropheys, brought from raids), probably to PIE **peuH-* 'clean, purify' (LIV 432); this root may also appear in Lyc. dat. pl. (after 'altar stands') *pune-r-e ... sebe pibe-r-e* (44b.36), possibly 'for purification(s) and offering(s)/donation(s)'; stem *pi-be-r-* to Lyd. *bi-fe-r-*.

qaj-ã (acc. sg.; god **Hwaya-* < **hwai-* 'run'?) in *qajã wesñteli* 'Phellian Qaja[-patron?]'; Trqqiz orders the priests to libate (separately) both *q. w.* (= embodiment of Tešub-Zeus?) and *xba-ladã* 'Lady Hebat'; *q. w.* may be functionally identical to *[w]esãtñniu qñtbẽ* (acc. sg.; Xerẽi libates [verb *uwa-*] this god in Antiphellos); note initial consonants *q. w.* vs *w. q.* (both in Antiphellos). Cf. also CLuv. *hūwayalla/i-*, sungod's epithet (Mil. would yield **qaja-li-*). Puhvel translates Luv. (in Hitt.) *hūwayalli* ^{D}UTU-*i* as 'to the fleet (?) sun-god' (HED 3: 422). - Cf. *qñtra* below.

_q(e)l-ei_ (dat.-loc. sg.) ‘preservation (place)’ (in 55; functionally matches _mlat-i_ in 44), about location of rites and tribute-deliveries. Cf. Mil.-Lyc. _qla-_ ‘precinct’ (vel sim.) and Mil. verbs _qla-_ ‘preserve, collect’ (produce for offerings), iter. _qel-ẽn-e-_ id.; cf. acc. sg. _qel-id-eli albã_ ‘harvest-related libation’ (if _qel-id-_ means ‘harvest’); acc. neut. pl. _qelelija_ ‘preservation (of Lycia/Lyc. dynasty)’; acc. sg. _qliju xupeliju_ ‘funerary (_x._) outfit’ (about Xeriga’s funeral). Cf. Hitt. _hul(a)-_ ‘wind, twist, twine’ < PIE _*H_^{w}_el-_ id.

*qere/i- ‘raid’$^{?}$ (or _*qara-_; syn. _xusti-_, _km̃qi-_, _pre-_; cf. words for ‘fight’: _erbbi-_, _laxa-_) : Lyc. _hri-qeri_ *‘Top raider/hunter’$^{??}$: PN Qarñn-ax-a [built as Mil. nouns _ul-ax-a-_ ‘killer’, _mrss-x-a-_ ‘cheater’, _s[xx-a]x-a-_, _pru-x(a)-_], possibly, to Hitt. _hu(wa)r-n-_ ‘to hunt’ (< PIE _*HwerH-*/HurH-_, Kl. 372); cf. Mil. adj. (< participle$^{?}$) _qereimi-*_ ‘raid-related’$^{?}$ in 2 abl.-instr. phrases (55): _luwa-dla-di ... qereime-di_ ‘(splinters/broken parts: acc. sg. _terblẽ_) from raid-related (_q._) breakage’ (_l._); _km̃masa-di ... qereime-di_ ‘(I didn’t narrate/report to river-gods [any] quarrel(s): acc. sg. _xlu-s-ã_ : Hitt. _halluwai-_) with raid-related (_q._) trifles (_k._)’; this comes after Pixre warns tax cheaters that his security (_abura_) will break (_tirb-e-_ < PIE _*dhreb-_) their pots/vessels (_zirãpla_) into smitherings.

qetbe-* ‘fight’ (?) in (substantivized) adj. _qetbe-leimi-s_ (acc. sg.), _qetbe-leim-a_ (acc. coll., attr. to _sabak-a_) which seems to equal _tuple-leimi_ (nom. sg.; the same kind of a substantivized adj.) which allows us to identify Mil. _tuple-*_ ‘fight’$^{?}$ (see below).

qezm̃mi (nom. sg.; dat.-loc. sg.), a feast and/or offering, lit. ‘killing’, about sacrificial animals only; cf. syn. _qzz-e_, _qñz-a_, _epe-qzzi_; all to Lyc. verb _qã(n)-_ ‘destroy’, iter. _qas-_ (directly matching Mil. stem _qez-_ < _qñz-_) : Hitt. _kuen-_ < PIE _*g_^{w}_hen-_ ‘kill’ (DS).

qidra-* (noun) ‘raid, hunt’ (vel sim.), cf. adj. _qidra-sa-_ (attr. to ‘supplies’ in abl. _qiqlẽnire-di ... <q>idra-sa-di_), noun _qidra-l-a_ (dat. sg. ‘agility’), verb _qidr-i-_ ‘rush, galopp’. Possibly to Anat. _*huidar_ ‘wild beasts’ < PIE _*H_^{w}_ei(-d/s)-_ ‘live, life’ (?).

qi-qlẽni-re-di (abl., with attr. _<q>idra-sa-di_ ‘raid/hunt-related’) ‘reserve, supply’, to verbs _qla-_ ‘preserve’, iter. _qel-ẽn-e-_ ‘accumulate’ (produce for offerings); cf. _q(e)l-ei._

qirz-ã (acc. sg.) 'share'; note that *qirz-ẽ* (2x) is gen. pl. (not acc. sg.); possibly to Hitt. *h(u)wart-*, *hurt-* 'to curse', Lyc. *xurz-id-* 'oath' (?) < PIE **Hwórt-/*Hurt-* 'vow' (Mil.-Lyc. *-zV-* < **-tyV-* ?); cf. Mil. *sbir-te-* 'share' and *urt-u-* 'tax, tribute' for semantics.

qla (nom. sg.), *ql-e* (dat.-loc. pl.) 'precinct' (vel sim., as in Lyc.); see *q(e)l-ei* above.

qlij-u (acc. sg.) in a direct-obj. construction *qliju xupeliju sebe lijeiz ... lupeliz* 'the funerary (*x.*) outfit and the sad/grieving (*lupe-li-z*) nymphs', governed by *ni ... lugãtu* 'let them not burn!' (to HLuv. *luha-* 'burn'): Xerẽi speaks about Xeriga's funeral.

qñtb-ẽ (acc. sg., with attr. *[w]esãtñniu*) '(Phellian) Patron' (vel sim.; a god?); see *qajã.*

qñt-il-i (dat.-loc. sg.) 'to the manager(s)', about 'keeping pledge' (*mlu x<r>ãti*) to *tunewñni*-Xerẽi 'for payments' (*klleim-e* in 44d) to his managers; the passage deals with Xeriga's funeral and power-transfer of to Xerẽi. Related nouns: Mil. *qñtra* 'managers, urban officials', *qntbe-* 'patron' (?); note Lyc. *qñt-a ti* 'who (is) in charge', possibly matching a Mil.-Lyc. participle *q-ñt-* to the above stem *qa(ja)-* < **hwaya-.*

qñt-r-a (nom. sg., a coll. notion) '(urban) managers/authority', cf. Lyc. *qñt-a ti* 'who [is] in charge', to Anat. **h(u)w-anta-* (:Hitt. *huwantar-*, HED 3: 430) as possibly in Hitt. *h(u)wantalai-* 'allow to escape' *huwai-* 'run', etc. If correct, then all Mil.-Lyc. words in *q-ñt-*, as well as Mil. *qaja-*, may ultimately originate from Anat. **hwai-* 'run'.

qñza, *qzze*, *(epe)qzzi-* (offerings/feasts) see *qezñmi* above.

qrbbl-i (dat. sg.) 'goblet, drink/libation (for men and masc. gods)', instr. *qrbble-di* '(let them glorify Xanthians) through libation(s)', dat. sg. *qrbbl-al-i* '(take the Phellian Patron$^{?}$) for a libation' (acc. neut. pl. *qrbbl-ala** is built as *abr-ala*, *ã(a)la* [< *an-ala*, DS], *zb-ala**); cf. possibly Hitt. *h(u)warpalli-* 'cymbal' (a cymbal was also used as a drink vessel), *hurp-a/us-ta-* 'leaf, peel, scale', CLuv. *huwarp-anna-* id., all to PIE **H^{w}(e)rbh-* (as in IEW 1153 **werb(h)-*) > Lat. **werbesna* > *verbēna* 'laurel leaves and sprouts'; cf. HED 3: 406. For semantics cf. *alba-* 'libation for men' (but cf. *albrãna*, lib. vessel for Trqqiz; thus *alba-* may functionally equal *qrbbli*) vs. *tuwẽmi-* 'libation for nymphs and *xba-lada-* ('Lady Hebat'); cf. in this connection *sukr-i* below.

rm̃pa see *arm̃pa*; *ripsse* see *(e)ri-psse*, etc.

saba-di (instr.) 'with the protection/detachment' in a location indication *saba-di mrGGd-i* 'at the sepulcher (**mrGG-id-i*) with a protection', where *saba-* 'protection/detachment' = *sabaka* id. = *pad(a)* id. = *kuli* id.: probably about the *mrGGa*-deities (Anat. **M(a)rgwaya-*) of the Netherworld, protectors of royal tombs. Mil. *saba-* (a protective unit), *sebe-* 'to watch, scour' may match a Hith. noun **sap-as-* as preserved in *sapas-alli-* 'scout', *sapas-iya-* 'to scout' < PIE **sobh-os-*, verb **sebh-*.

sap-al-i (loc. sg.) 'during a *sapala*-treating' - apparently, at Xeriga's tomb (which is mentioned, as usually, in pl.: *ub-ẽ*, gen. pl.); type: *qrbbl-al-i* 'for a libation' [cf. also *zb-al-i* in 44c.20 ... *ewẽne zus-i zb-al-i* '(let [an offerer?] not damage$^{?}$ a v[essel]) for Zeus to drink during a *z.*-feast'$^{?}$]. Mil. *sap-al-i* appears in Xerẽi's warning to a (potential) violator who 'removed a libation(-vessel$^{?}$) during a tribute-delivery' (44c.7-8 *albm ... qtti-de zit-i*; for *qtti-* cf. Hitt. *huetti-* 'to drag'); note acc. pl. neut. *abr-al-a* 'libation'. Mil. *sap-al-i* may originate from IE **sehp-* 'to taste; know' (LIV 470, possible root variants: **saHp-*, **s̥ap-* or **sHep-* [any would yield a Mil. *sap-*]; cf. IEW 880). Mil. may have preserved the original meaning of this root ('durch Schmecken wahrnehmen', as in LIV 470), cf. other cases of stressing the high quality of treats: dat. sg. *prijãm-i ... qrbblal-i* 'for an excsllent libation', *ekan-ẽ* (gen. pl. or acc. sg.) *kuprimi* 'a victim of choice', *kãtdq-ẽ ... kuprim-ẽ* (gen. pl.) '(treats) of selected grains'$^{?}$, *kuprime-si* 'offering-priest', lit. 'pertaining-to-choice/selection'. - Cf. *zawa*.

se<pt>ãmi (noun; acc. sg.) 'seven' as a unit (type: 'triplet'); in 55.3: *pri ... da-te qir{:}z-ẽ se<pt>ãmi* 'first, (the libation-priest) put/placed a seven of shares (gen. pl. in -*ẽ*) ...'; note the original form *sljtãmi* where *l* is very similar to *e*, and *j* is very similar to *p* (one of many cases which indicate that the engraver of TL 55 didn't understand the text he was engraving in stone). - Cf. in Lyc.: *hbãti* CII (= figure '7') *ul-e* 'when pushing (< **s(u)wandi*) the Seven to death' (:Mil. *ula-xa-* 'killing, killer').

ses-i (dat. sg.) ‘for distribution’, *sse* < *ses-e** (dat. pl., to *sasa** ?) : Lyc. *ha-*, CLuv. *sa-* ‘release, let go’, *sa-ssa-* ‘release, grant’ (Mil. forms in offering/feast instructions).

sla-* (noun) in *ura-sla* ‘great offering’ (below) or rather ‘great glorification’, cf. Mil. verbal forms *sla-ti, ẽnẽ sla-di, ẽnẽ-sla-tu, ẽnẽ-slãtu*, all to *sla-* ‘glorify’$^{?}$: Hitt. *salh-*.

sttrm̃mi (acc. sg., used collectively; pendant to *pasb-ã* ‘detachment’) ‘producer(s)’, to Lyc. *hrm̃ma-* ‘land section; temenos’ : Lyd. *širma-* ‘temenos’; the noun *sttrm̃m-i* shows a Luv.-like shift [str] < *[sr]; for the individualizing suff. *-i-* cf. *waxs-i* (voc. = nom.) ‘guard, warrior’ to *wax(s)a* ‘guards’; similar: Lyc. *turaxss-i* ‘Turaxssan’ (= god Natri-Apollo of Turaxssa = Mil. *turaxssa-li natri* ‘Turaxssan Natri’), nom. sg., etc.

sukr-i (dat. sg. in a libation instruction), *sukre-di* (instr. in a lib. description: ‘with drinks’$^{?}$), *sukr-ẽ* (gen. pl. in *weri ... sukr-ẽ* ‘supervisor of drinks’); seems to denote drinks/libation for Trqqiz or for the troops, thus synonymous both to *alba-* and *qrbbl-i*; cf. PIE **swek-* ‘smell (good)’ or **suk-ro-* ‘agitation’ (?); cf. *alba-*, *albãma*, and *qrbbl-i.*

sxxaija (acc. neut. pl.?) ‘(feudal) contribution, tax’, *s[xxa]xa* (nom. sg.) ‘contributor, taxpayer’, built as *ul-ax-a-* ‘killer(s)’, *mrss-x-a-* ‘cheater’, cf. verb *mrss-x-a-* ‘cheat’ (:Hitt. *mars-ahh-*, with a factitive suff. *-ahh-*), note verb *as-xxa-* (built from *asa*; see above). Mil. stem *sxxa-* may be akin to Luv. and Hitt. *sahh-an-* ‘feudal service’, cf. Mil. noun *sxxaija* (above) vs a CLuv. verb *saxxan-iya-* ‘impose feudal service’.

tal-ã (acc. sg. with attr. *nei* [a pendant to *tuwi ... murei* ‘wine (*m.*) party’$^{?}$]; cf. acc. pl. *nei-z ... tuwi-z*); *tal-i* (dat.-loc. sg.) ‘evocation (rite)’ for the god Zri-q/gal-i (dat. loc. sg.; see below) : Hitt. *talliye/a-* ‘evoke, implore’ < ‘drew, attract, allure’, to PIE **del(H)-* id. (CM; cf. also Kl. 819); note Lyc. verb *teli-* ‘call upon, call for’ (?).

tasñt-u (acc. sg., as per DS), possibly, a roast-meat stand (:Lyc. *tahñtãi* [not *ahñtãi*]), used with instr. *uwa-di* ‘with bovines’ (as in Lyc.); cf. related nouns *tss-e* and *tesẽni.*

tede/i-* ‘father’ (as in Lyc.), cf. adj. *tede-si* : Lyd. *taada-* ‘father’, CLuv. *tāta/i-*, HLuv. *tata/i-* id.; note CLuv. adj. *tata-lla/l-* ‘paternal’ (CLL 211f.).

terbl-ẽ (acc. sg.) ‘broken parts’ (+ dat.-loc. pl. *lle* = *l(e)l-e* ‘at the stele’); verb *tirbe-ti* ‘(*abura*) will break (the pots) into smithereens’ (: Russ. *raz-bit’ v-drebezgi*), both in 55; cf. PIE **dhreb-* (LIV 134) or **dhrebh-* (IEW 272f.); only in Germanic and Slavic.

terẽi (nom. sg.; nomen agentis as *lbijẽi* = *(a)lbijẽi*; similar: [Mil.-]Lyc. PN *xerẽi*); an official; cf. dat.-loc. pl.$^{?}$ *ter-e*, locations of tribute-payments (:Lyc. *(sttati ...) terñ* ??).

tes-ẽn-i (acc. sg.; a treat, built as *mu-lẽn-i*, also a treat; see above); cf. *tasñt-u*, *tss-e.*

tewẽm̃ (acc. sg.?) may mean ‘damage, harm’ (vel sim.), cf. Lyc. acc. neut. pl. *tawa* (GL 339): ‘evil eye’ (?); the expression *uguwãm-ã tewe-te arm̃p-ã* seems to mean ‘(he) eyed/encountered the enraged$^{?}$ god [*arm̃pa-* Trqqiz?]’; this is about a violator who dragged away (*qtti-de* : Hitt. *huittiya-*) libation, destined for use at Xeriga’s sepulcher.

tẽp-e (nom. sg., a collective meaning; syn. *tm̃pewẽti*) ‘nobleman; nobility’; Xerẽi urges these people to contribute for major offerings/feasts; *tẽp-/tm̃p-* possibly to PIE **temp-* ‘strain oneself’ which also appears in Hitt. *damp-u-* ‘blunt’ < PIE **tomp-u-* : Russian *tupoj* id.; cf. Toch. A *tampe* ‘might’, etc.; alternative interpretations are possible. – Cf. Lyc. cognates (PNN): *tm̃pe-ri*, *tm̃peime*, *te-ttm̃pe*; *tẽp-ina.*

tid-ñt-a (all.) ‘for libation/drinks’ (DS: ‘women’): Pixre used to assemble (*xba-de*) the ‘detachment of the stele’ (*kuli ... mru[w]asi*) for a libation; cf. *erẽpli* above. To Lyc. *tideimi* ‘son, child’ < ‘nurtured’, *tide-ri* ‘collacteus’, CLuv. *titaimma/i-* ‘nurturing (mother)’ < **tit(a)i-* ‘nurse, suckle’ (CM) < PIE **dhehi-* (vel sim.) id.: cf. LIV 120.

ti-je (dat.-loc. pl.; treats for commoners), *ti-u* (acc. sg.; a treat for a god), *tik-e* (dat.-loc. pl.; with attr. *edije*; treats for Trqqiz’s entourage/suite: *xrbblata-*); *ti-ka** may originate from **tija-ka*, cf. *saba-ka* (to *saba-* ‘detachment’) and *uta-ki-ja* (to *ute* ‘for distributions/presentations’) which may presuppose **uta-ka*; suff. *-ka* as in Slavic ?

tm̃pewẽti (nom. sg.; acc. sg.) ‘nobility’; see syn. *tẽpe.*

t-m̃qr- (both in nouns and verbs) = *ute* + *m̃qr-* (see both).

trlluba (nom. sg.?), possibly a god = Lyc. Trzzuba.

trppali (acc. sg., governed by an imp. 2nd p. sg. *tu* 'put/place!') 'addition, second helping' during a feast; cf. verb *trppala-* 'replace' (:CLuv. *tarpasa-* id.), to CLuv. *tarpalli-*, *tarpassa-*, *tarpa-na-lla/i-* 'ritual substitute', Hitt. *terepp-* 'to plough' < 'to turn', all to PIE **trep-/*trp-* 'turn' (as in Gr. *trépo*, Lat. *trepo*, etc.).

truje-l-i (dat.-loc. sg), *truije-l-e* (dat.-loc. pl.), some major celebration (not a person), possibly to Hitt. *tar(k)u-* 'to dance', *tarw-esg-ala-* 'dancer' < PIE **terkʷ-* 'to turn' (as in Kl. 842, vs **terk-* id. in LIV 577). [Mil. *tru(i)je-* may somehow match Lyc. *truwe-* '?', cf. Mil. *xruje-* vs. Mil.-Lyc. *xruwa-* (Lyc. also *xruwe/i-*) in words for offerings].

tss-e (dat.-loc. sg. or pl.) 'stands/tables (for meals)', about a feast; cf. Lyc. *θθẽ.*

tube-di (instr.) 'with punishment' : verb *tubi-* 'strike, punish' : Lyc. *tub(e)i-* 'strike' : CLuv. *dūp(a)i-* id., *dupiyalla/i-* 'club, mace', **dupawar/dupaun-* 'striking, punishment' < PIE **dheubh-/*dhubh-* 'club; strike', IEW 208 (cf. *tuple-* below).

tuburi-z (acc. pl.) 'Tuburans', Xerẽi's guards; they came from the city of Tuburehi.

tulijew-i (dat. sing.; with attr. *masasi* 'of gods') 'to the assembly'; also *tulije-* id. [but not *'tulijele-'*; there is an adj. *tulije-li-*] : CLuv. & Hitt. *tūliya-* 'assembly'; CLuv. adj. *tūliya-ssa/i-* 'of the assembly', to PIE **tuH-l-yo-*. Cf., at the end of 44, an imp. 3rd sg. *tu-tl-tu* (DS, with an emend.), possibly 'let ([any future] ruler) multiply/strengthen (the ... feasts)!'; *tu-tl-<* **tu-tul-* (?), ultimately to PIE **teuH-/*tuH-* 'swell, be strong'.

tune-wñn-i (dat. sg.; cf. nom sg. *tunewñni*) 'ruler, patron' (vel sim.), built as *xbide-wñni* (lit. 'Kaunos-inhabitant'), epithet of Natri-Apollo of Turaxssa (*turaxssali natri*). The term *tunewñni-* denotes twice or thrice the ruler Xerẽi; then, in loc. pl. *ñtet-e ... tunewñni<je>* (55.8-9; emend. by DS) 'at the patrons' tombs', we seem to deal both with Pixre and his wife (both are sculptured on the Antiphellos sarcophagus); as in other cases, the word for 'tomb' is used not in sg. but in pl. (cf. *ñtad-a xñnije*, *plejerese [xu]p-e*, *ub-e*; possibly also *ubr-e*).

tup-le-* 'fight' (?) in a substantivized adj. *tuple-leimi* (one of Xeriga's epithets, as *xñtabaimi*, *waxsi*)'; cf. a semantically identical adj. *qetbe-leimi-* (above), to Lyc. *tupelija-* (a commander), cf. *tupele-zi-*, ossibly to PIE _*(s)teup-_ ‘push, thrust, strike’, (this latter root can not be present in CLuv. _dūpi-_ = Lyc.-Mil. _tubi-_ ‘strike, punish’; cf. rather PIE _*dheubh-_ ‘club; hit’). The component _*leimi-_ (? < PIE _*lēi-_ ‘gain, win’ as in IEW 665; here also Lith. _laimùs_ ‘lucky’) may mean ‘winner, lucky’, hence _tuple-leimi_ and _qetbe-leimi_ ‘Winner/Lucky-in-fight’ = ‘victor(ious)’ (?).

tuta-si-z (voc. pl. = nom. pl.) ‘kinsmen’, cf. all. _<t>ut-a_ (for _zuta_) ‘for [my] kin’ (similar engraver’s mistake: _xñtawaza_ for _xñtawa<t>a_) : PIE _*teutā_ ‘people, country’; here also probably Hitt. _tuzzi-_ ‘army, common people’ < _*tut-yo-_ (thus contra KL. 908: _tuzzi-_ < PIE _*dhh_$_1$_-uti-_, to PIE verb ‘put, place’ [??]). For semantics cf. Schürr 2008, about Lyc. _señnaha_ which may match Greek _génos_ ‘race, family’.

tuwẽm-i (dat. sg.) ‘for a libation’$^{?}$ [for nymphs/nymphads and for ‘Lady Hebat’, as opposed to _alba(ma)_, _muri_, and _qrbbli_, - libations for men & masculine gods]; cf. next.

tuw-i (dat. sg.; cf. _tuwi_ acc. sg.; adj. _tuwije-_) ‘for a feast/offering’ (similar: DLL 133); cf. verbs _tu-_ ‘put/place (as a treat)’, Lyc. _tuwe-_ ‘put/place’, Mil.-Lyc. iter _tu-s-_; cf. further Mil. inf. _tñn-e_; Mil. _da-_ ‘put/place’, _ute_ ‘for distributions’; all to PIE _*dheh-_.

tuxara-di (instr., with attr. _punama-d-ije-di_ ‘total’) ‘fumigation’ or ‘burning’, cf. CLuv. noun (in Hitt.) _tuhhara-_ which denotes ‘things that are being burned’ (Kl. 889) : Hitt. _tuhhai-_ ‘produce smoke’ < PIE _*dheuH-/*dhuH-_ id.; note Greek _thúō_ ‘I’m making a sacrifice via burning’; cf. LIV 131. Note _lusa-*_, verb _luga-_ ‘burn’, inf. (?) _sẽkẽne._

_ub-e_ (dat.-loc. pl.) ‘at the tombs/monuments’, a location of offerings, feasts, and tribute-payments (similar: Mil. loc. pl. _ñtada_, _ñtete_, _[xu]pe_); cf. gen. pl. _ub-ẽ_. IY compares Lyc.-Mil. _uba-_ with Car. _upe_ [uƀe] = _ue_ ‘tomb’ (this variation indicates an instability of the intervocalic consonant); as it is known, Mil.-Lyc. _b_ represents [ƀ]. Adiego (2007, 21: Table) identifies the Car. letter #24 as _‘p’_; this doesn’t take into account the well-known variation Car. _‘upe’_ : _ue_ ‘tomb’. Car. letter #24 has a variant, similar to B (which, actually, is a clue to its origin: it is [ƀ] as _b_ in Lyc.). On the other hand, Car. letter #10 Γ, which still shows the shape of an archaic pi, - and must be [p], - was transcribed by Adiego as _‘b’_. It is known that letter

#10 can be used for #24, and vice-versa. - For details about Car. and Lyc. *ube* 'monument' see Yakubovich 2005.

udr-ñt-e (dat.-loc. pl.?) 'for presenting/distrubutions', cf. *ute*; *u-dr-ñt-e* may match Lyc. *pa-dr-ñta-* (: Hitt. *u-dai-* vs. *pe-dai-*), cf. also Mil. dat. pl. *pas-ñt-e* and all. *tid-ñt-a.*

ul-ax-a-di (abl.) 'from killing/killers' (not to *laxa-di* 'from fights') in 44c.46-7 *puke-ti: xbidewñni: ulaxa-di: zrẽtẽni* 'the Kaunian [Natri] saves (*puk-e-* < PIE **bheug-* 'to free, to save', etc.: LIV 68; IEW 152) the Protector (acc. *zrẽtẽni* =Xerẽi) from killing/ killers [in a fight]'; IY: 'killers'. Mil. *ul(a)-* : Lyc. *ul-e* 'to death' : CLuv. *wal-anti-/ul-anti-* 'dead'; here also Lyc. *la-* 'die' < **wla-* < **wal-* id. (CLL 250).

ura-sl-a (all.), *ura-sl-i* (dat.-loc.) 'great offering' (DLL); cf. Luv. *ura-* 'great'; see *sla-*.

urtu (acc. sg., with attr. *qel-id-e-li* 'harvest-related' ?) 'tax, tribute', mostly used as adj. 'tribute-related, of tribute'; possibly to PIE **wert-* 'to turn, wind' (> Engl. *worth*, via 'opposite' > 'equivalent'; Watkins) [Mil. *urtu-* is not related to *ura-* 'great']; cf. *marãz.*

utakija (all. or dat.) 'for distributions (of shares)' to Xerẽi's warriors; to **uta-ka-* 'distribution'; cf. *saba-ka-* 'detachment', and *ti-ka-* 'treat(s)' < (?) **tija-ka-* (suff. *-ka-* as in Lyd. *saro-ka-* 'protection'; cf. frequent *-ka* in Slavic languages); see *ut-e* next.

ut-e (dat.-loc. sg. or pl.) 'for distributions/presents', about offerings and treats; frequently used with ***m̃qr-***. - Altern.: 'during announcements', to Hitt. *uttar* 'speech'.

uwa-di (abl.-istr.) 'with bovines' (?), cf. Lyc. *uwa-dra-xi* 'bovine offering', to *wawadra-* 'herd of cattle', *wawa-/uwa-* 'cow, bovine' : CLuv. **wāwi-*, HLuv. *wawi-* 'cow' < PIE **g*^{w}*ou-* id. (phonetically similar: CLuv. *wānā-* 'woman' < PIE **g*^{w}*ónā-*).

warasije-z (acc. pl.), treats (meals & drinks) at major feasts; thus 'helpings' (?); *warasije* anf acc. sg. *keri* (2) are both governed by *xupdi-* 'pile up' (+ *trei xali* 'in three portions'$^{?}$; cf. *xali*). Note all. *wirasa-ja* or *wirasaja-ja* 'for service$^{?}$ (of portions [*m̃qr-ẽ*] for distributions)' in 55.1. To Hitt. *ware/issa-* 'help' = iter. of *warai-* 'come to aid' < PIE **wer-*

'surround/cover/contain' or 'defend/save/protect (oneself)' ('service, gratification' in Greek); based on Luv. **wariya-*; Rose 457. See *weri.*

waxs(s)a (acc. coll.; also all. or dat.) '(protecting) guards'; *waxsi* 'Warrior' (voc.; Trqqiz addresses Lyc. ruler Xeriga) : Car. PN *uksi* (cf. *uks-mu* below) : Hitt. *wahessar* 'swing', iter. verb *weh-esk-* 'to patrol' (< PIE **waH-* 'turn'); note Lyc. names Wexssere, Waxssebe, Waxsse-pddimi; Car. *u/úks-mu* = *waksa-muwa-* (Naming #34).

weri 'libation priest, supervisor (of drinks: gen. pl. *sukr-ẽ* ?)' : 2nd stem of Luv. names -warra/i- 'help/aid to X' (CM), cf. Tarhu-warra/i- *Help to Tarhunt'; see *warasije-z.*

wije-dri (acc sg.) 'lower-rank officers/command' : Hitt. *wiye-/a-* 'to send (here)' < *u-(i)ye-* as opposed to *pe-ye-* 'send (away)'. Built as Lyc. *tuke-dri* 'statue'.

wiras-ja or *wirasaja-ja* (all.) 'for service'$^{?}$; see *warasijez* and *weri* above.

wisi-u (acc. sg.) 'beer' or 'wine' (?), governed by *tu-* 'place (as a treat)', cf. *medu* 'wine' also governed by *tu-* (cf. acc. sg. *tesẽni*, a treat, governed by *tu-*); cf. dat.-loc. sg. *wis-id-i* 'for a wine/beer party' (syn. *qrbblal-i*, *mur-i*); *wisi-* seems to match CLuv. *wis(a)i-* 'to press' (DLL), cf. Hitt. *wis-ur-iye/a-* 'to press (together)', note Kl. 1013f.

wzzaije- may be a DN or a divine epithet (2x in adj. *wzzaije-si* with *mlat-i*; *palar-ã*).

xab-a (loc. sg.) 'at the river' (as the location of libations for the river-deities: *ner-e*); Pixre is speaking in 55.6: *mlu neriu: muwa-xa: tuwẽme-di: xab-a: tutasi-z* 'I've strengthened (*muwa-xa*) the river-deities' (= adj. in acc. sg. *neri-u*) pledge (*mlu*) through libations$^{?}$ (instr. *tuwẽme-di*) at the river, [my] kinsmen (voc. pl. *tutasi-z*)!'; cf. CLuv. *hāpa/i-* 'river' < PIE **Habh-o-* id.; CLuv. **hapā(i)-* 'to irrigate/water', Lyc. *xba(i)-* id. (Altern.: all. *xab-a* 'for a rapprochement [with deities]'). - See *xbadi-z.*

***xapa-** 'rapprochement'$^{?}$ (in *xapa-xi* 'for a rapprochement-feast/offering' ?) : Hitt. *happ-* 'join, attach', *happ-essar* 'joint'; note also CLuv. *happis-* 'limb, member' < PIE **Hap-* as in Lat. *aptus* 'fitting' (cf. Kl. 293f.). Cf. data sub *xaba* and *xbadi-z.*

xbadi-z (acc. pl.; voc. pl. [as *pleliz, tutasiz*]) 'Xanthians' < 'river valleys', as *eke-di* 'with peasant(s)' vs *ek-e* 'in locales'; cf. CLuv *hapati-* 'irrigated land’ < *hapā(i)-* ‘irrigate, make wet’, cf. also *hāpa/i-* ‘river’. [Note that *xba-de* is not related; it is a verbal form of *xba-* ‘attach to’ (as also *xba-ti*) : CLuv. *hapi-/hapai-* ‘bind, attach to’].

[xerẽi] (PN Xerẽi; Lyc. commander, then ruler; author of TL 44) appears only in Lyc. texts; in Mil., he is referred to as *zrẽtẽni* ‘Protector’, *ñtuwitẽni* ‘(High) Commander’, *ẽnari* ‘Mighty’, *tune-wñni* ‘Patron’? (lit. ‘Tuna/e-inhabitant’ ?). PN Xer-ẽi (with *-ẽi* < **-on-i*) may be related to Hitt. *hāra(n)-* ‘eagle’ (contra CM) <PIE **Hór-on-* (a bird).

xi (noun in dat.-loc. sg.; cf. *xapa-xi*; Lyc. *uwadra-xi*) ‘feast, sacrifice’; noun *xi-na-** is seen in an adj. *xina-si* ‘feast-related’ (dat. sg., attr. to *ses-i* ‘for distribution to’); cf. Mil. imp. 2nd p. sg. *xi* ‘offer/present (a treat to)!’, Mil.-Lyc. iter. *xi-s-*; further unclear.

xlu-s-ã (acc. sg.; a coll. sense) ‘quarrel(s)’ : Hitt. *halluwai-* ‘quarrel’; see sub *qere/i-**.

xñna-* ‘grandmother’ (as in Lyc.), cf. adj. in loc. pl. *(ñtad-a) xñnije* ‘at the grandmother’s (tomb(s))’, a typically Mil. use of pl. forms in texts about a tomb: cf. *ñtet-e (tunewñnie), (plejerese) [xu]p-e, ub-e* (:gen. pl. *ub-ẽ*). Cf. Lyc. *xñna-* ‘grandmother’ (adj. *xñnahi-*) : Hit. *hanna-* : Arm. *han* : OHG *ana* < PIE **Hanho-* id.

xñta-ba- (noun; adj. *xñtabasi*, *xñtabaimi* [built as *(a)rñpaimi*]) ‘ruler, commander’, may refer to Xeriga; Xerẽi; god Trqqiz [there is no *‘xñtabatu’*], a ruler, a commander. Cf. Hitt. *hantai-* ‘arrange, prepare, fix’ (or *hanta-* ‘forehead, front’ <PIE **Hant-* id.)

xñtawaz-a (dat. sg.) ‘royalty’, a carver’s mistake for *xñtawa<t>a* (DS), as *zut-a* for *<t>ut-a* (cf. *tutasi-z*); cf. Lyc. dat. sg. *xñtawa-t-a* matching Mil. *xñtawa<t>a*; note Lyc. acc. sg. *xñtawat-ã* (in 44b.37) which refers to many statues of Lyc. royalty at the *agora* (Lyc. *agarãi*) in Xanthos. Mil. *xñtawa<t>a* is used in *ẽnes-i-ke tedes-i-ke xugas-i x.* ‘and for the motherly, and fatherly, and grandfatherly rulers/rulership’: apparently, about offerings to the souls of the deceased royalty. (Mil.-Lyc. *xñtawa-ta-* ‘royalty’ is built as Mil. *xrbbla-ta-* ‘entorage, suite’). Cf. Lyc. *xñtawa-* ‘to rule’ : PIE **Hantowo-* ‘formost, ruling’ < **Hant-* ‘front’ (Naming #5b); cf. Lyc. PN Xñt-abura.

xrbb-la-t-ã (acc. sg.), *xrbblat-a* (all. or dat. sg.) 'entourage (of Trqqiz)' : Hitt. *harp-* [h(a)rb-] 'join/associate with, ally oneself with', cf. Hitt. *harba/i-* and *harpal(l)i-* 'pile, heap' < PIE **Horbh-* as in OIr. *orb(b)* 'heir; inheritance', Arm. *orb* 'orphan', etc. The Mil. noun *xrbbla-ta-* is built precisely as Mil.-Lyc. *xñtawa-ta-* which also have a coll. meaning; both nouns show a common gender (see sub *xñtawaz-a* above).

[xrssẽn-i] (Lyc. noun, loc. sg.) 'thunderstorm'$^?$: 44b.52 'for the local Trqqiz [and] the 12 sky-inhabitants$^?$ (*tabaha-z-a*) in his (*ehb-i*) thunderstorm' : Hitt. *harsatar/harsannas* 'stormgod of thunder', *harsi-harsi-* 'thunderstorm, lightning storm' (similarly built: Mil. *ekãn-ẽ* : Hitt. *akkātar/akannas* 'dying'; inf. *ewẽne* (verb *uwe-* 'drink' + 'od(s)' in acc.) : Hitt. *akuwātar/akuwannas* 'drinking'; *esãna-* : *ēshar/ēshannas* 'blood'. - Cf. *piha-**.

xruwa-sa-z (acc. pl.; about treats during a major feast) 'delicacies' (??); cf. Lyc. *xruwata* (possibly, acc. pl. neut.) 'votive offerings', *xruwe/i-* 'offering stand' (DLL). – Further unclear; not to Mil. *xra-* 'keep' (not 'offer'), but possibly to Hitt. *har(k)-* id.

xuga-* 'grandfather' (same in Lyc.), cf. adj. *xuga-si-* 'of g.'; precisely to CLuv. noun *hūha-* vs Hitt. *huhha-*, all to PIE **HáuH-s/*HuH-ós* (cf. Kl.), as in Arm. *haw* id., etc.

xum-ala (nom. sg., built as *zaj-al-a*), an official who is supposed to send/direct (verb *nẽnije-*) a grant (*masxxm̃*) to a location in Xanthos (probably, to the Xanthos stele with Xerẽl's tomb) for a periodic (=annual ?) feast in Xerẽi's commemoration (details in WNG). Mil. *xum(a)-* may relate to Hitt. *humma-* 'stable, pen'. Altern.: Lyc. *(hri-)xuwama-* '(super-)attending' or '(super-)attendance' : Anat. **hwai-* 'run' (CM).

xupa-* 'tomb' (as in Lyc.), cf. adj. in acc. sg. *(qliju) xupeliju* 'funerary (outfit)'; adj. *xupelije-* built as *xñnije-* 'of grandmother'; the origin of Mil.-Lyc. *xupa-* is unclear.

xus-tt-i (dat. sg.) 'for agility'$^?$ (pendant to *ptt-il-i* and *qidr-al-a*, 44d.49), instr. *xustte-di* 'with dexterity' (characterizes god Natri's actions in 44c.33); cf. verb *xusti-* 'rush (smth. to)'. Cf. Mil. *xus-tti-* 'agility' vs Lyd. *ws-ta-* 'alive' < Anat. **Hus-tó-* (AHP 347) (?), note Hitt. *huis-/hus-* 'live, survive', Lyd. *wes-fa-* 'living' < **Hwés-wo-:*.

xuzr-ñt-a (all.) ‘for the (12 statue-shaped) protectors (of Xeriga)’, apparently, the deities which are otherwise called ‘detachment of the stele’ *(pad(a) mruwasa* in 44c and *kuli mruwasi* in 55); they seem to be the *mrGGa-*gods (protectors of royal tombs). Related: adj. or participle *xuzruwãt-a (waxss-a)* ‘for the protective/protecting (guards)’ (of Xerẽi); acc. pl. *tuburiz ... xuzruwẽtiz* ‘protective/protecting Tuburans’; acc. sg. *xuzrñtasi ... xrbblatã trqqñtasi* ‘protective entourage/suite of Trqqiz’ (= ‘all gods’ ?); cf. *mrGGd-i, sapali, kuli.* - Mil. *xuzr-* to Anat. **huissar* (cf. Lyc. *xudr-* : Mil. *qidr-*) (?).

xzzãt-ã (acc. sg. with an attr. *xerigaz-ñ* ‘of Xeriga’) ‘tribute, tax’ which was introduced by Xeriga; Trqqiz (which means, naturally, Xerẽi) condemned/denounced (*zñp-de*) this tax. Cf. CLuv. *hizza(i)-* ‘hand over’$^{?}$ (CLL). Mil. noun *xzzãta-* has absolutly nothing to do with the Greek city name Xanthos (Lyc. Arñna).

zaj-a or *zat-a* (acc. pl. neut.) ‘taxes’, governed by *ãpi-ti* ‘(Pixre) imposes’; dat. or all. obj. is *p/lijanuw-a*, either ‘for payment’ or ‘for the nymphad (of Pixre)’; cf. nomen agentis *zaj-ala* ‘tax-payer’ (built as *ziw-ala** and *xum-ala*, above), verb *za-za-* ‘arrange, put in order’ (CM: ‘allot, distribute’, but obj. is ‘offering/libation stands’ and ‘Tuburans [=warriors])’; in both cases, rite preparations are shown; cf. Lyc. noun *za-* (acc. sg. *zã*) ‘allotment, portion’ (DLL); cf. Mil. *zẽn-a.*

zaw-a *... palaraim-a* (all. or dat. pl.) in 44d.7 ‘for apportioned (*p.*) ‘meals/offerings’ (cf. acc. sg. *palar-ã* ‘vessel’ ?); the above phrase is a part of Xerẽi’s warning to [any] violator who, during a tribute delivery (*zit-i*) would remove (verb *qtti-* : Hitt. *huetti-* ‘drag’) a libation supply (*albm*), destined for *zaw-a ... palaraim-a*; gen. pl. *ub-ẽ* (‘of tombs’; pl. for sg., as usually) indicates that the action is at Xeriga’s tomb; this is corroborated by the all. construction (which is ‘inside’ the frame *zawa ... palaraima*): ‘for the 12 statue-shaped Xeriga’s protectors (all. *xuzrñt-a*)’; cf. verb *za-za-* ‘arrange’.

zẽn-a (all. or dat. pl., with attr. *lusali-ja* ‘fiery’) ‘for fiery broiling’$^{?}$, if to Hitt. *zē-* ‘cook’ (*-ẽn-* may be an iter. suff.); a formal match is with Lyd. *cẽn(a)-* ‘to dedicate’$^{?}$. A special priest named Mãmre is urged to announce (verb *nuni-*, possibly with an iter. suff.) the *xruwasa-z* (acc. pl., to Lyc. *xruwata* ‘votive offerings’, DLL 85), - possibly, products for the ‘fiery *zẽna*-preparation’. This happens at Xeriga’s funeral (WNG).

zi-(e)reimi- (in different case forms) ‘produce-delivery/levy’, see *ereim-e* above.

zi-(e)rẽpli- (in different case forms) ‘produce-pots, wine-pots’$^{?}$ (cf. *er-ẽ-pli*); note 55.2: *abura* (subj.) ... *tirbe-ti zirãpl-a* (acc. pl. neut.) ‘[My = Pixre’s] security will break (into smitherings) [violator’s] pots/vessels’; to PIE **dhre/ob-* (LIV 134), cf. acc. *terbl-ẽ*.

zin-i (dat. sg. = *zus-i*; Lyc. *zeus-i*) ‘to/for Zina-Zeus’ (in 44d), cf. substantivized adj. *zina-s-e* ‘to Those of Zina-Zeus’ (= 12 gods; ‘all gods’ ?), 55.5; both Pixre and Xerẽi (but not Xeriga) seemed to be ardent worshippers of Zina/Zuse (Zeus); cf. MZL.

zi-psse- (in different case forms) ‘produce-delivery’, cf. *de-zi*, *ziw-i*, *zit-i*; *pss-ẽ*.

zi-t-i (dat.-loc. sg.) ‘tribute-delivery’, cf. noun *de-zi* (nom. sg., possibly, ‘additional/ new delivery’), *zi-psse-* ‘produce-delivery’; Lyc. *ze-* ‘put’ (:‘kill’ in martial texts; *ẽti zehi* ‘in a fight’); note Lyc. *uha-ziti* which may be syn. to *uha-zata* ‘yearly tribute’.

ziw-al-ã (acc. sg.; cf. *ziw-i*, next) ‘tax-payer’ built as *zaj-ala* id., *xum-ala* (see above).

zi-w-i (loc. sg.; to above forms) ‘delivery’ as in 44c.54-5 *sebe-di: qirz-ẽ: ziw-i* ‘(Xerẽi) scours [+ acc.: 4 cities] for contribution(s) of shares (gen. pl. in *-ẽ*)’; the noun in question is *zi-we-** (with a suff. *-we* < **-war*, as in *tulije-we-* ‘assembly, gathering’, dat. sg. *(masa-s-i) tulijew-i*; cf. also *pllu-we-* * ‘abundance’, dat. sg. *plluw-i*, etc.).

zm̃pr-a (dat. or all.) ‘offence, injury’ (vel sim., to CLuv. *zammura-* ‘insult, slander’), verb *zm̃p-de* (3rd p. sg. past, 44d.45) ‘(Trqqiz) condemned/doomed (...)’. - Altern.: acc. pl. neut. ‘bread’, to Hitt. *zammuri-* id.; less likely.

zpp-l-i (loc. sg.; a relatively frequent form) ‘altar’$^{?}$ = ‘slaughtering place’ (?), usually in connection with offerings for Trqqiz; cf. CLuv. *zapp-* (a destructive action).

zrbb-l-ã (acc. sg.; *z* < **s* before *r*) ‘growth, raise’ : HLuv. *sarwa-* ‘to increase’; cf. PIE **ser(H)-* ‘join, attach to’ (LIV 484; IEW 919; Germ. **sarwan* ‘arms’, HGE 319) (?).

zrẽtẽni (nom. sg.) ‘Protector’ (one of Xerẽi’s titles); acc. pl. *zrẽtẽniz* ‘commanders’; to Lyd. *šarẽt-a-* ‘protector’ (about *levs* ‘Zeus’) < PIE **ser-* ‘watch, protect’ (LIV 483f.).

zri-gal-i < *zri-qal-i* (dat.-loc. sg.), a god (Natri ?); to *zri-* = Lyc. *hri-* as in *hri-qla* ‘high authority’$^{?}$; type: Lyc. *hri-qeri* *‘Top Raider/Hunter’$^{??}$; *qali** : Hitt. *hull-* ‘smash’? For *zri-* cf. *seri(je)-* ‘elevate’ (DS) with acc. obj. phrase *ek-aburã: sebe masa*, 44c.64-5.

zrpped-u (acc. sg.) ‘(god) Sarpedon’ (Gr. Sarpēdṓn); its statue was moved (verb *pu-*) during an offering rite (44d.5-6); cf. 55.4-5, about ‘placing’ (effigies of) Qaja Wesñteli and Lady Hebat for (separate) libations: *qrbblal-i*; *t[u]wẽm[-i]*. Zrppedu may mean ‘having top position’ (SLL 138) : Lyc. *hrppi* ‘on, above’, Lyd. *srf-asti-* ‘upper’ (Haas). Note Lyc. Zrppudei (dat. ?); in any case, there is no ‘dat. sg. Zrppedun-i’ in 44d.6 (as in DLL 111) since negation *ni* is certainly a part of a typical Mil. phrase *ni-ke qezm̃mi.*

zus-e (nom. sg.) ‘Zeus’ (from Greek, as also Lyd. *lev/fs*), dat. sg. *zus-i*, same as *zin-i.*

zuta is an engraver’s mistake for *<t>ut-a* (all.) ‘for [my] kin’, anlaut as in voc. pl. *tuta-si-z*. Note that *z* is written for *t* also in *xñtawa{z}a*; see these words above.

References

Adiego 2007 = Adiego I.J., *The Carian Language*, Brill, Leiden-Boston.

Ardzinba V. G., *Ritualy i mify drevnej Anatolii* [Rituals and myths of the ancient Anatolia], Nauka, Moscow, 1982.

AHP = Melchert H.C., *Anatolian Historical Phonology*, Rodopi, Amsterdam-Atlanta, 1994.

CLL = Melchert H.C., *Cuneiform Luvian Lexicon*, Chapel Hill, N.C., 1993.

CM = Melchert H.C.[1]

Corpus = Hawkins J.D., *Corpus of Hieroglyphic Luwian Inscriptions*, Vol. I, Part 2, Walter de Gruyter, Berlin – New York, 2000.

---

[1] Reference to correspondence or oral discussion.

DLL = Melchert H. C., *A Dictionary of the Lycian Language*, Beech Stave Press, Ann Arbor – New York, 2004.

DS = Schürr D.[2]

EIW = Pokorny J., *Etymologisches indogermanisches Wörterbuch*, I. Bd., Francke, Bern – München, 1959.

GL = Neumann G., *Glossar des Lykischen*. Überarbeitet und zum Druck gebracht von J. Tischler, Harrassowitz, Wiesbaden, 2007.

HED = Puhvel J., *Hittite Etymological Dictionary*, Vol. 3, Mouton de Gruyter, Berlin – New York , 1991-.

HFR = Kassian A., Korolëv A., Sidel'tsev A., *Hittite Funerary Ritual* ***šališ waštaiš***, Ugarit-Verlag, Münster, 2002.

HGE = Orel V., *A Handbook of Germanic Etymology*, Brill, Leiden – Boston, 2003.

HS = *Historische Sprachforschung.*

IF = *Indogermanische Forschungen.*

IM = Shevoroshkin V., Introduction to Milyan, *Mother Tongue*, 2008 [2009].

IY = Yakubovich I.[3]

Kl. = Kloekhorst A., *Etymological Dictionary of the Hittite Inherited Lexicon*, Brill, Leiden – Boston, 2008.

LIV = Rix H. (ed.), *Lexikon der indogermanischen Verben*, Reichelt, Wiesbaden, 1998.

LW = Gusmani R., *Lydisches Wörterbuch*, C.Winter, Heidelberg, 1964.

LW Erg. = Gusmani R., *Lydisches Wörterbuch*, Ergenzungsband, C.Winter, Heidelberg, Lief[erungen] 1-3, 1980-.

Melchert H. C., The Animate Nominative Plural in Luvian and Lycian, *Sprache*, 2009.

MZL = Shevoroshkin V., Misadventures of Zeus in Lycia 2500 Years Ago, *Aramazd*, Yerevan, VI, 1, 2012.

Naming = Melchert H.C., Naming Practices in the 2nd and 1st Millenium Western Anatolia, 2011 (MS).

NPh = Schürr D., Nymphen von Phellos, *Kadmos* 36, 1997.

Rose = Rose S.R., *The Hittite* ***-hi/-mi*** *Conjugations*, Innsbruck, 2006.

Schürr 2008 = Schürr D., Lykisch *θurtta-* und **señnaha*, *IF* 113.

---

[2] Reference to correspondence or oral discussion.

[3] Reference to correspondence or oral discussion.

Schürr D., Lykisch und Karisch *un-*, *HS* 122, 2009.

Schürr D., Lykische Genitive, *IF* 115, 2010.

Shevoroshkin 2011 = Shevoroshkin V., K ponimaniju milijskix tekstov [Toward an understanding of Milyan texts], *Slovo i jazyk* [FS Ju.D.Apresyan], Jazyki slav'anskix kul'tur, Moscow.

Shevoroshkin V., Anatolian Laryngeals in Lycian and Milyan, *Sound of Indo-European,* University of Copenhagen, 2012.

SLL = Yakubovich I., *Sociolinguistics of the Luvian Language*, Brill, Leiden-Boston, 2010.

St. = Starke F., *Untersuchungen zur Stammbildung des keilschrift-luwischen Nomens,* Harrassowtz, Wiesbaden, 1990.

TMHR = Kassian A. S., *Two Middle Hittite Rituals*, Paleograph, Moscow, 2000.

WC = Shevoroshkin V., Word Combinations in Milyan and Lycian Inscriptions, *Studia Linguarum* 3/1, Languages of Slavonic Culture[s], Moscow, 2002.

WNG = Shevoroshkin V., Why are the Nymphs Grieving in Xanthos ?, *Aramazd* VII, 2012 (to appear).

Yakubovich 2005 = Yakubovich I., Carian Monument, *FS L.G.Gercenberg*, Nauka, St.-Petersburg.

ZAP I = Schürr D., Zum Agora-Pfeler in Xanthos I, *Kadmos* 46, 2007.

ZAP II = Schürr D., Zum Agora-Pfeler in Xanthos II: Selbstlob auf Perserart und Ordnung des Raumes, *Kadmos* 48, 2009.

V. Shevoroshkin, vvs@umich.edu

Surmic Numerals

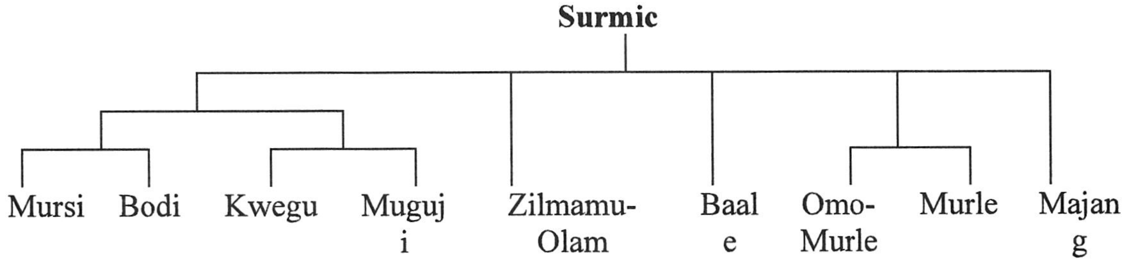
Václav Blažek
Masaryk University

The purpose of the present study is to summarize the data on Surmic numerals and to determine which are inherited and which are borrowed, the latter most frequently from East Cushitic.

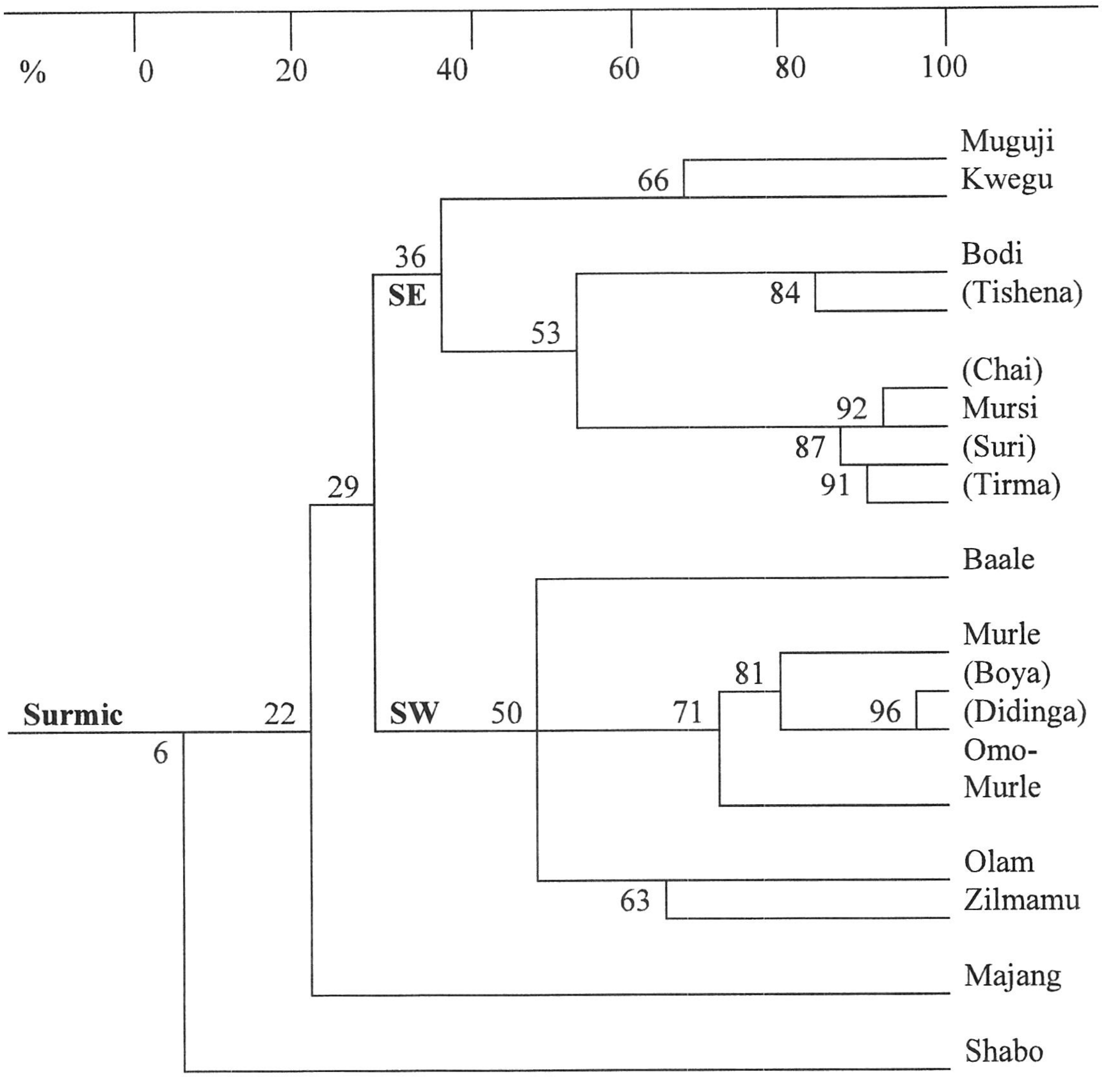
1. Bender (1977, 18) obtained the following cognate rates for the Surmic languages:

%	Majang	Murle	O.Murle	Mursi	Baale	Zilmamu	Olam	Kwegu	Muguji	Bodi
Shabo	22	9	11	6	10	5	6	2	5	3
Majang		26	24	19	25	29	30	16	13	15
Murle			71	41	56	53	55	24	19	31
O. Murle				36	45	44	53	19	19	25
Mursi					44	36	34	43	32	53
Baale						50	46	26	22	31
Zilmamu							63	27	24	29
Olam								26	22	33
Kwegu									66	37
Muguji										32

1.1. He constructed the following diagram with five coordinate branches:

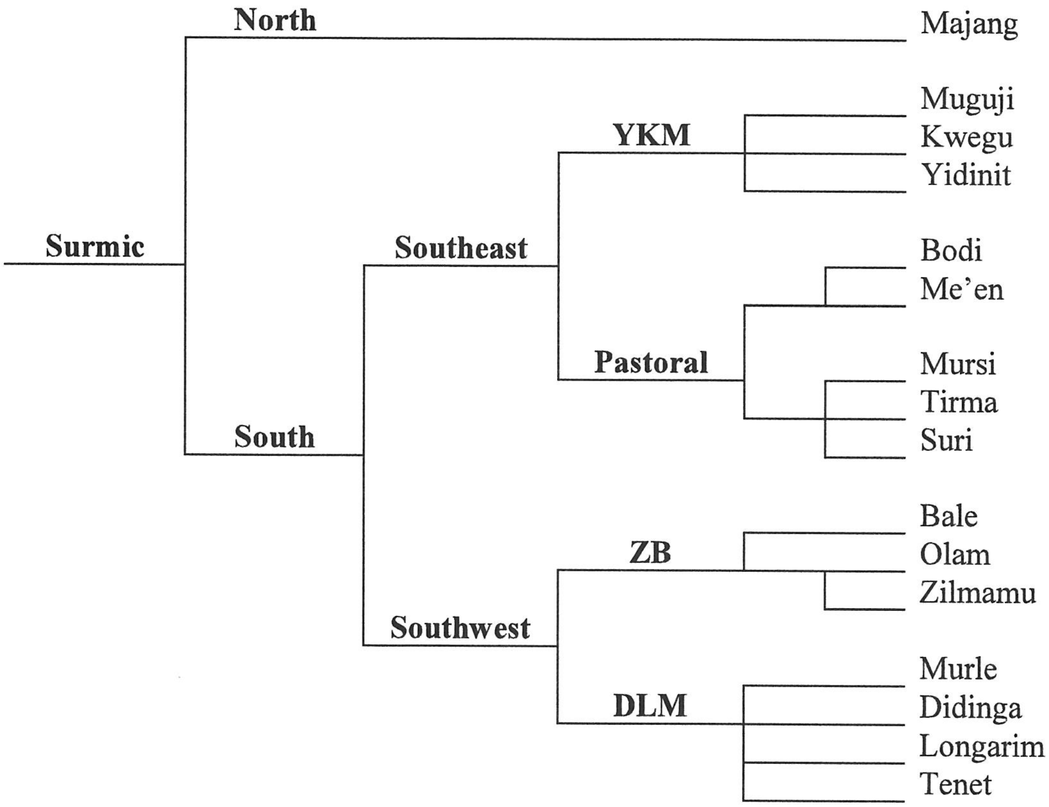


1.2. Bender added the pairs of languages with highest percentages of cognates: Didinga-Boya 96, Mursi-Chai 92, Tirma-Suri 91, Suri-Mursi 87, Tishena-Bodi 84, Murle-Didinga 81. Taking into account all these results (the additional languages are in brackets), it is possible to construct a diagram which is rather different from the scheme proposed by Bender.

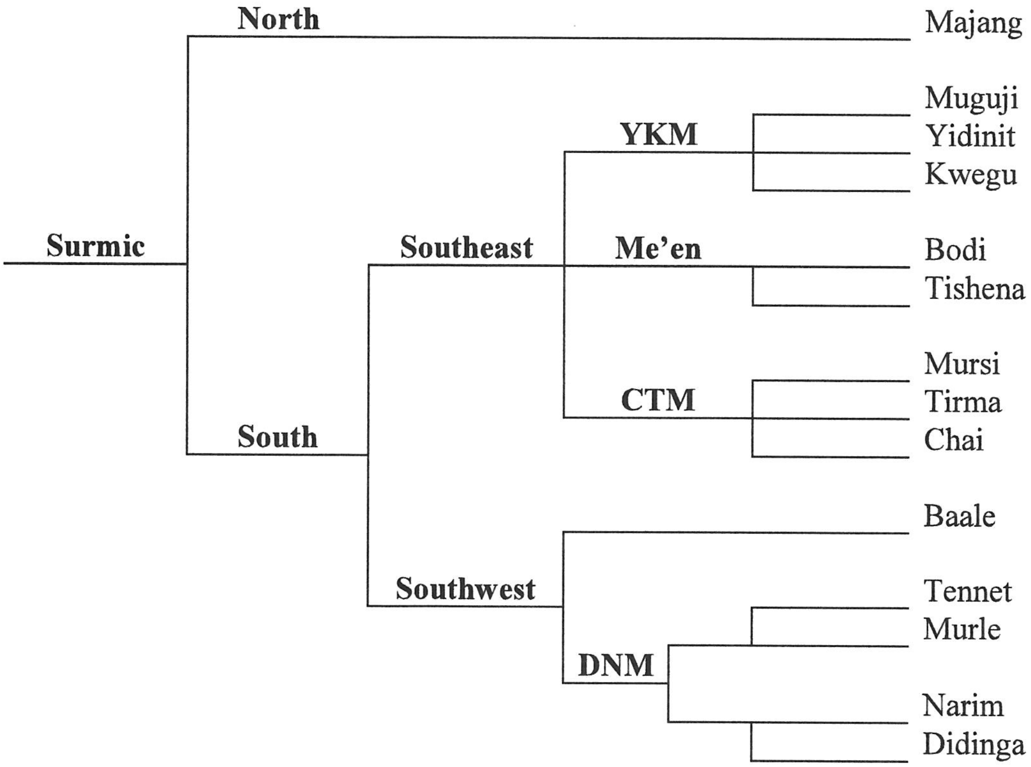

%
0
20
40
60
80
100
Muguji
Kwegu
66
36
SE
Bodi
(Tishena)
84
53
(Chai)
Mursi
(Suri)
(Tirma)
92
87
91
29
Baale
Murle
(Boya)
(Didinga)
Omo-Murle
81
96
71
SW
50
Surmic
22
6
Olam
Zilmamu
63
Majang
Shabo

1.3. There are two anomalous results, 22% between Shabo & Majang as against the average 6.3% common to Shabo and the remaining Surmic languages, and 38% between Mursi & Southwest Surmic languages. These unexpectedly high figures were probably caused by secondary contacts. In more recent classifications Shabo is not taken into account, but its numerals are apparently borrowed from Majang.

1.4. Classification of Surmic languages (Unseth 1988)


North
Majang
Surmic
YKM
Muguji
Kwegu
Yidinit
Southeast
Bodi
Me'en
Pastoral
Mursi
Tirma
Suri
South
ZB
Bale
Olam
Zilmamu
Southwest
DLM
Murle
Didinga
Longarim
Tenet

1.5. Classification of Surmic languages (Dimmendaal 1998, 13)


North
Majang
Surmic
YKM
Muguji
Yidinit
Kwegu
Southeast
Me'en
Bodi
Tishena
CTM
Mursi
Tirma
Chai
South
Baale
Southwest
Tennet
Murle
DNM
Narim
Didinga

2. Surmic numerals: survey

	1	2	3	4	5	6	7
Shabo	*iŋki*	*bap*	*jiita*	*aŋan*	*tuul*	*tulu(ŋ/m)*	*tulikakiŋki*
Majang	*omoŋ*	*pee*	*jiit*	*aŋan*	*tuul*	*tuulaom*	*tuulapee*
Yidenit	*čé:man*	*δa*	*gí:'en*	*wo:č*	*há:ča:na*	*élle*	*íssabi*
Kwegu	*kium*	*δaa*	*jien*	*ahur*	*cun*	*la*	*ts'oba*
Bodi	*kómdo/kón:a*	*rámma*	*sí:zi*	*wú:'ič*	*háčana*	*élle/ílle*	*íssa:ba*
Me'en	*kon*	*rama*	*sizzi*	*woč*	*hačana*	*elle*	*essaba*
Mursi₁	*δò:nè/ko:n*	*ràmàn*	*θìzzì*	*uwì/wu:š*	*há:nán*	*ìllè*	*ìθa:bài*
Mursi₂	*a:dó:na*	*(ar)rámman*	*sízzi*	*wú:'i(č)*	*há:na(n)*	*(h)ílle*	*(h)íssabi*
Tirma	*done*	*r/naman*	*sisi/dizi*	*uš / woš*	*ay(e)na*	*ille*	*(i)sabai*
Chai	*δò:nè*	*ràmmán*	*sízzì*	*wùy/wùš*	*háíná*	*íllé*	*sá!bái*
Baale	*óóδe:*	*rámmá*	*íyyó*	*wé*	*túr*	*tɔ:rkɔ́nɔ:*	*tʊ:rgérɛ:*
Murle	*adoi/čodo*^{H}	*ramma*	*iiyu*	*weec*	*tur*	*tɔrkɔnɔm*	*torgɛrɛm*
Omo-Murle	*čadoi*	*ram*	*hiyu*	*hueč*	*tur*	*turgonom*	*turgorem*
Longarim	*čodoi*	*ramma*	*iyo*	*weč*	*tur*	*torkonon*	*turugerem*
Didinga	*kode(i)*	*ramma*	*iyo*	*weč*	*tur*	*torkonon*	*tukeramma*

	8	9	10		20		30
Shabo	*tunajiita*	*tulaaŋan*	*bapif*	2 hands (*ifu*)	*iŋk upa kor*	one person	
Majang	*tuulajiit*	*tuulaŋan*	*aarn*		*rumir idit*	person completed	
Yidenit	*ísse:t*	*sá'al*	*tómmo*				
Kwegu	*lonkai*	*sal*	*tomon*		*lamatam*		*makamtam*
Bodi	*isse:t/issé:te*	*ságal/sá:le*	*tómmo(na)*		*hirkunko*	man-one	*tómmon tómmon gá:ra sí:zi*
Me'en	*esset*	*sakal*	*tommon*		*tidam*		
Mursi₁	*iθθè*	*θàkàl*	*tomon*		*hir / θuo*	man people	*hír kon ko tomon*
Mursi₂	*íssi / hísse*	*sákal / ássakal*	*(a)tómmon*		*hirkun*	man-one	*hirkúnko tómmon*
Tirma	*issi / isse*	*sak(k)al*	*(a)tomon*		*irkun*	man-one	*hirkunku tomun*
Chai	*líšé*	*sák!kál*	*tɔ́mɔ́n*		*hírkón*	man-one	
Baale	*tu:rge:*	*tɔ:rgɔ́gɔ:*	*ɔ:mɔ:ðɔ́*		*e:e:ccí óóδe:*		*e:e:ccí óóδe: kɤ ɔ:mɔ:ðɔ́*
Murle	*turge*	*tɔrkɔc*	*amɔtɔ*		*iyim/etema*^{H}		
Omo-Murle	*turge*	*turkoy*	*ammato*				
Longarim	*turugi*	*torkowei*	*omoto*		*etima*		
Didinga	*turkiyo*	*turkiweč*	*omoto*		*itumwa*		*itumwa ki omoto / ken iyo*

	40	50	60	70	80	90	100
Kwegu	*oitam*	*dontam*	*latam*	*ts'obatam*	*lonkaitam*	*saltam*	*dip*
Bodi	*tómmon tómmon gá:ra wú:'ič*						
Mursi$_1$	*θuo raman*		*zuo siizi*[2008]		*zuo wuš*[2008]		*θuo há:nán*
Mursi$_2$	*zú:gu rámma tómmon*						
Tirma	*zu ramman*						
Chai							*jùgòháíná*
Baale	*e:e:ðá rámmá*	*e:e:ðá rámmá kɤ ɔ:mɔ:ðɔ́*	*e:e:ðá íyyó*				*e:e:ðá túr*
Didinga	*ken weč*						

2.1. Survey of the Surmic languages compared, with synonyms and sources:

Baale	Yigezu & Dimmendaal 1998.
Bodi	Haberland 1966.
Chai	Last & Lucassen 1998.
Didinga	Haberland 1966.
Kwegu = **Koegu**	Hieda 1998.
Longarim = **Narim**	Haberland 1966.
Majang = **Mesengo**	Tefera & Unseth 1989.
Me'en = **Meken** = **Meqen**	Haberland 1966.
Murle	Haberland 1966.
Mursi$_1$	Turton & Bender 1976.
Mursi$_2$	Haberland 1966.
Omo-Murle	Haberland 1966.
Shabo	Tefera & Unseth 1989.
Tirma	Haberland 1966.
Yidenit	Haberland 1966.

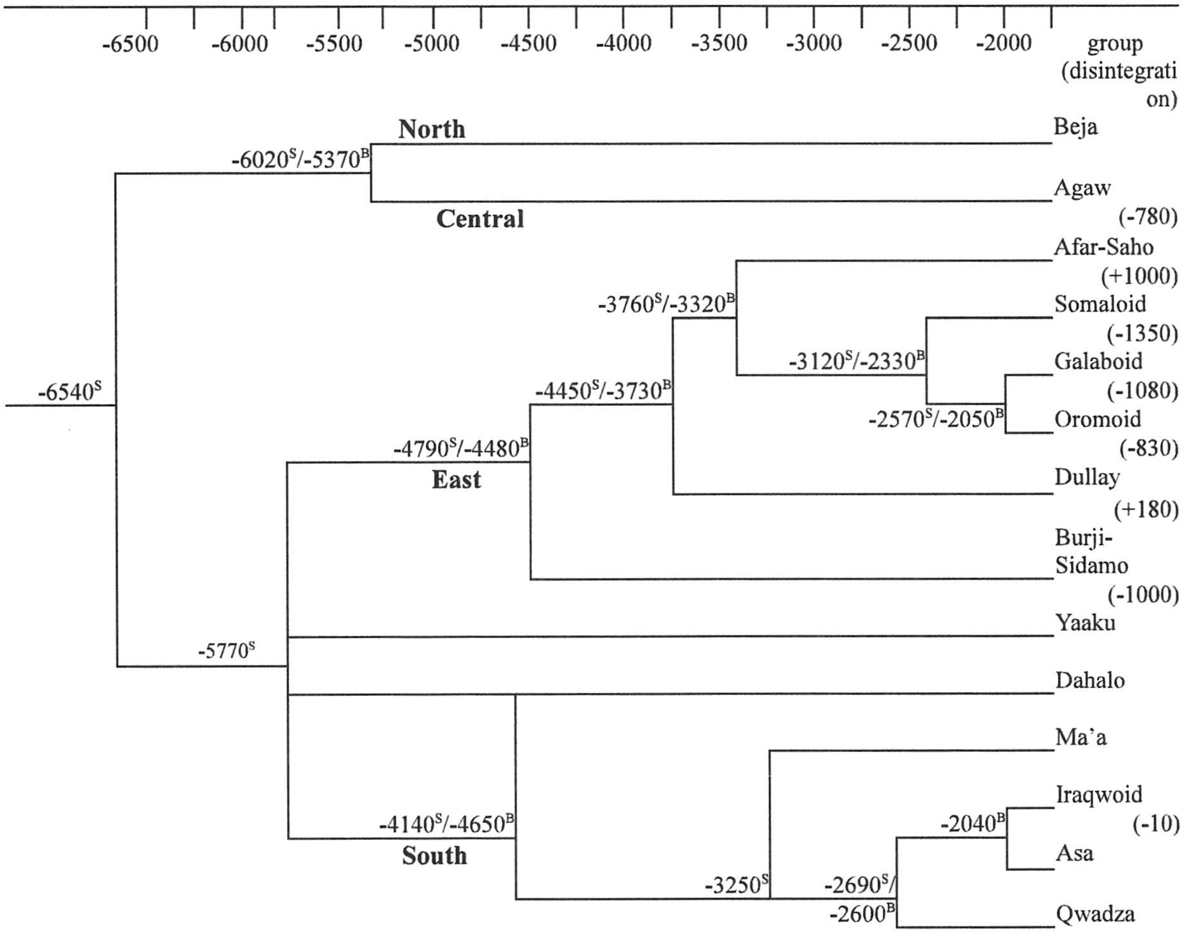
3. East Cushitic numerals: survey

	Afar-Saho	Somaloid	Galaboid	Oromoid	Dullay	HEC	Yaaku
1a		So _mid_		Or _matummanu_ totally		_*matto / *mitto_	
1b		_*koow_		_*kaww-_ alone			
1c			_*tokko_ m. _*takka_ f.	_*tokko_ m. _*takka_ f.	_*to'akko_ m. _*to'atte_ f. Ts _dookko/dootte_		
1d	_*'in(V)ki_						
1e							_wɛhɛto_
2a	_*lamm-ay_	_*lamma_	_*laama_	Or _lama_ Ko-D'i _*lakki_ Mo _tammó_	Do _lammay_ _*lakki_	_*lamo_	
2b							_c'ɛ_
3a	_*sizaħu / *'aszaħu_	_*sizzaħ_	_*seezzee_	_*šezziya_	_*'iszaħ_ Do _siseħ_	_*sadziya_	
3b				_*kalabatta_			
3c							_xaat_
4a	_*'af(f)ara_ _*fer-ey_	_*'afar_	_*'af(f)ur_	_*'afur_			
4b					_*salaħ_	_*šoole_	_çwen_
5a	_*koon(-oy)_	_*kani > *can_	_*ken > *cen_	_*kani_			
5b					_*xoobin_		_xoopi_
5c						_*omute_	
6a	_*liħ(-ey)_	_*liħ_	_*lih_	_*leħ_		_*(e)liho_ Bu$_{CR}$ _elíyà_	_ilɛ́_
6b					_*tabbin_		
7a	_*mal(V)ħiin_					_*lamala_	
7b		_*tizzoba_	_*tizba/*tuzba_	_*tozba_			_tisíbo'_
7c					_*taħħan_		
8a		_*sizzeet_	_*sizeet/*suzzet_	_*sezzeeti_	_*sezzen_	_*sazzeento / *hiszeento_	_siite'_
8b	_*baħaar_						
8c				D'i _lakkušet_			
9a	_*sagaal_	_*saagal_	_*saagal_	_*sagali_			_saakal_
9b					_*gollan_		

	Afar-Saho	Somaloid	Galaboid	Oromoid	Dullay	HEC	Yaaku
9c						**honso*	
10a	**taman*	**tomman*	**tommon*			**tomne*	
10b		(Re *kúd* 100)		** kuḍan*	**kuḍḍan*		
10c							*qapon*

Abbreviations: Bu$_{CR}$ Burji by Conti Rossini, Do Dobase, D'i D'irayta, Ko Konso, Mo Mossiya, Or Oromo, Re Rendille, So Somali, Ts Tsamay.

4. Cushitic classification


-6500
-6000
-5500
-5000
-4500
-4000
-3500
-3000
-2500
-2000
group (disintegration)
North
Beja
-6020S/-5370B
Agaw
Central
(-780)
Afar-Saho
(+1000)
-3760S/-3320B
Somaloid
(-1350)
-3120S/-2330B
Galaboid
-6540S
(-1080)
-4450S/-3730B
-2570S/-2050B
Oromoid
(-830)
-4790S/-4480B
East
Dullay
(+180)
Burji-Sidamo
(-1000)
Yaaku
-5770S
Dahalo
Ma'a
Iraqwoid
-2040B
(-10)
-4140S/-4650B
South
Asa
-3250S
-2690S/
-2600B
Qwadza

Abbreviations: **B** Blažek, **S** Starostin, George (p.c. 2010).

5. Comparative analysis of the Surmic numerals

5.1. The Southeast & Southwest Surmic numeral "2" and Southeast Surmic numerals "3, 5-10," plus Kwegu "4," are apparently of East Cushitic origin. In East Cushitic the closest counterparts appear in Galaboid. Heine, Rottland & Vossen (1979, 82) tried to explain the similarities between South Nilotic and East Cushitic numerals "6 - 10, 30, 40, 50, 100," assuming an absorption of a hypothetical Omo-Tana population by Southern Nilotes. They designated this hypothetical community *Baz* according after a local name of Lake Turkana. The East Nilotic (especially Maa) counterparts should have been transmitted via Southern Nilotic (ibid., p. 85), but a Southeast Surmic mediation is more probable from the point of view of both phonetics and linguistic geography.

	Surma		**South Nilotic** (Rottland)		**East Nilotic**	**East Cushitic**
	Southeast	Southwest	pKalenjin	Datooga	(Vossen)	late Galaboid
2	*_ramma_	*_ramma_				*_laama_
3	*_sizzi_					*_seezzee_
4	Kw _ahur_					*' _af(f)ur_
5	*_(haa)čaana_					*_cen_
6	*_ille_		*_lɔ_	*_la_	TeMa *_ɪllɛ_	*_lih_
7	*_tsaba(i)_		*_tɪsɑp_	*_isub_	NMaa _sapa_	*_tizba_
8	*_isseet_		*_sisiit_	*_sisiit_	Maa _isiet_	*_sizeet_
9	*_sakal_		*_sakaal_	*_šageeš_	Maa _sa(a)l_	*_saagal_
10	*_tommon_		*_tɑmɑn_	*_tɑmɑn_	*_-tomon_	*_tommon_
20	Me'en _tidam_		*_tiptem_	*_digdam_	Maa _tikitam_	Oromo _digdama_

Abbreviations: N North, p proto-, Te Teso.

5.2. The donor-language of the numeral "20" in Me'en (and of "100" in Kwegu) is different from the source of the other numerals. It could be a language of the Oromo type. Let us mention that the Oromo numeral "20" is isolated and unanalyzable within East Cushitic, but intelligible assuming its Nilo-Saharan origin, cf. West Saharan: Kashirda *dígidəm*, Tubu *digidom* "20" etc. and further Gaam *diag*, *ḍáag* "2", probably also Surmic: Yidenit *δa*, Kwegu *δaa* "2" etc. (cf. Blažek 1997, 163).

5.3. Some of Kwegu numerals are of South Omotic (Aroid) origin: Kwegu *ts'oba* "7": Karo *tsôbà* "7", Kwegu *lonkai* "8" : Karo *lonkày* "8", Kwegu *sal* "9" : Karo *sall* "9", Kwegu *makamtam* "30" : Karo *makàmm* "3", Kwegu *oitam* "40" : Karo *oydì* "4", Kwegu *dontam* "50" : Karo *doonn* "5" (Conti Rossini 1927, 252; Zaborski 1983, 388).

5.4. Separating out the loans, the unborrowed cardinal numerals of the first decade are completely preserved in Majang (and duplicated in Shabo) and almost completely in Southwest Surmic (with exception of "2"). From the Southeast Surmic branch, in Yidenit the numerals "1", "2", "3", "4" remain, in Kwegu "1", "2", "3", in Bodi, Me'en, Mursi, Tirma and Chai only "1" and "4". The most conservative is the numeral "1" preserved in all Surmic languages and also the numeral "4", replaced only in Kwegu. But it is necessary to stress that there are two forms of the numeral "4", the archaism *aŋan*, common for Majang (& Shabo) and almost all Nilo-Saharan branches, and the innovation of the type Tirma *uš* / *woš*, Bodi *wú:'ič* etc., which is perhaps compatible with common Tama **kus* "4" (Edgar).

#	Surmic forms	Nilo-Saharan cognates
1a	SWSu **(k-)ad/δoi*	ENil: Bari *kaδi* "alone"; Kuliak **εδ* id. (Eh 299)
1b	SESu **k-/δ-on-*	Kuliak: Ik *kɔn* "1; some; other" (Be 112; He 56)
2a	Majang *pee*, Shabo *bap*	Gu **mban(d)*; Kun *'baare*; Mb **mbar-* (Eh 273; Be 131)
2b	Yidenit *δa*, Kwegu *δaa*	Gaam *diag*, *ḍáag* "2"; Mb: Aiki *da* "other" (Be 120)
3	NSu **jiit-*, Yidenit *gíː'en*, Kwegu *jien*	Berta: Dul *zitigini*, Bertat *sittigini*, Wetawit *sittijini* "3" (B 5)
4a	NSu **aŋan*	NS **ɔŋwal* "4" (B 6; Eh 380; Be 131)
4b	SSu **hweč*	Taman **kus* "4" (B 17)
5	NSu **tuul*, SWSu **tur*	Mb **tura* "5"; Kuliak **tud* "5"; Taman **tur* "6" (B 4; Eh 436)

Abbreviations: ENil East Nilotic; Gu Gumuz; Kun Kunama; Mb Maban; N North; NS Nilo-Saharan; Su Surmic, SW Southwest.

References:

Amborn, Hermann, Minker, Gunter & Sasse, Hans-Jürgen. 1980. *Das Dullay. Materialien zu einer ostkuschitischen Sprachgruppe.* Berlin: Reimer.

B = Blažek, Václav. 1999. *Numerals.* Brno: Masarykova univerzita.

Be = Bender, M. Lionel. 1996. *The Nilo-Saharan Languages: A Comparative Essay*. München-Newcastle: Lincom Europa.

Bender, M. Lionel. 1977. The Surma Language Group: A Preliminary Report. *Studies in African Linguistics*, Supplement 7 (December 1977), 11-21.

Black, Paul. 1975. *Lowland East Cushitic: Subgrouping and Reconstruction*. Yale University: Ph.D. Thesis.

Blažek Václav. 1997. Saharan Numerals. *Archív orientální* 65, 159-170.

Blažek, Václav. 1998. Nubian Numerals. *Archív orientální* 66, 331-344.

Blažek, Václav. 2009. Nilotic Numerals. *Mother Tongue* 14, 143-156.

Conti Rossini, Carlo. 1910-11 - 1914-15. Studi su popolazioni dell'Etiopia. *Rivista degli studi orientali* 2, 849-900; 4, 599-651; 5, 404-415; 6, 365-425 (pp. 415-425: I Bambala di Amarr Burji e il loro linguaggio).

Conti Rossini, Carlo. 1927. Sui linguaggi parlati a nord dei laghi Rodolfo e Stefania. In: *Festschrift Meinhof*, ed. F. Boas et al. Glückstadt - Hamburg: Augustin, 247-255.

Dimmendaal, Gerrit J. 1998. Surmic languages and cultures: An Introduction. In: *Surmic Languages and Cultures*, ed. by Gerrit J. Dimmendaal & Marco Last. Köln: Köppe, 3-33.

Edgar, John. 1991. First steps toward Proto-Tama. In: *Proceedings of the Fourth Nilo-Saharan Linguistic Colloquium*, ed. by M.L. Bender. Hamburg: Buske, 111-131.

Eh = Ehret, Christopher. 2001. *A Historical-Comparative Reconstruction of Nilo-Saharan.* Köln: Köppe.

Haberland, Eike. 1966. Zur Sprache der Bodi, Mursi und Yidenič in Südwest-Ethiopien. In *Neue Afrikanistische Studien.* J. Lukas (ed.). Hamburg: Hamburger Beiträge zur Afrika-Kunde, 87-99.

Haberland, Eike & Lamberti, Marcello. 1988. *Ibaaddo ka-Ba'iso: culture and language of the Ba'iso.* Heidelberg: Winter.

Hayward, Dick. 1978-79. Bayso revisited: some preliminary linguistic observations, I-II. *Bulletin of the School of Oriental and African Studies* 41, 539-570 & 42, 101-132.

Hayward, Dick. 1979b. The Place of Bayso within Eastern Cushitic. In: *Proceedings of the Fifth Conference on Ethiopian Studies*, Session B (April 1978), ed. R.L. Hess. Chicago: University of Illinois at Chicago Circle, 73-90.

Hayward, Richard J. 1984. *The Arbore Language*. Hamburg: Buske.

He = Heine, Bernd. 1999.Ik Dictionary. Köln: Köppe.

Heine, Bernd. 1973. Vokabulare ostafrikanischer Restsprachen, I. Elmolo. *Afrika und Übersee* 56, 276-283.

Heine, Bernd. 1974-75. Notes on the Yaaku Language (Kenya). *Afrika und Übersee* 58, 27-61, 119-138.

Heine, Bernd. 1975-76. Notes on the Rendille Language (Kenya). *Afrika und Übersee* 59, 176-223.

Heine, Bernd. 1978. The Sam Languages: A History of Rendille, Boni and Somali. *Afroasiatic Linguistics* 6/2, 23-93.

Heine, Bernd. 1980. Elmolo. In: *The Non-Bantu Languages of Kenya. Language and Dialect Atlas of Kenya*, Vol. II. Berlin: Reimer, 173-218.

Heine, Bernd. 1982. *Boni Dialects*. In: *Language and Dialect Atlas of Kenya*, X. Berlin: Reimer.

Heine, Bernd, Rottland, Franz & Vossen, Rainer. 1979. Proto-Baz: Some aspects of early Nilotic-Cushitic contacts. *Sprache und Geschichte in Afrika* 1, 75-91.

Hieda, Osamu. 1998. A sketch of Koegu grammar: Towards reconstructing Proto-Southeastern Surmic. In: *Surmic Languages and Cultures*, ed. by Gerrit J. Dimmendaal & Marco Last. Köln: Köppe, 345-373.

Hudson, Grover. 1989. *Highland East Cushitic Dictionary*. Hamburg: Buske.

Lamberti, Marcello. 1986. *Die Somali-Dialekte*. Hamburg: Buske.

Lamberti, Marcello. 1987. Some Konsoid Etymologies. *Anthropos* 82, 529-541.

Last, Marco & Lucassen, Deborah. 1998. A grammatical sketch of Chai, a Southern Surmic language. In: *Surmic Languages and Cultures*, ed. by Gerrit J. Dimmendaal & Marco Last. Köln: Köppe, 375-434.

Parker, Enid M. & Hayward, Richard J. 1985. *An Afar-English-French Dictionary (with Grammatical Notes in English)*. London: School of Oriental and African Studies.

Pillinger, Steve. & Letiwa Galboran. 1999. *A Rendille Dictionary. Including a Grammatical Outline and an English-Rendille Index*. Köln: Köppe.

Rottland, Franz. 1982. *Die Südnilotischen Sprachen.* Berlin: Reimer.

Sasse, Hans-Jürgen. 1974-75. Galla /š/, /s/ und /f/. *Afrika und Übersee* 58, 244-263.

Sasse, Hans-Jürgen. 1975-76. Weiteres zu den ostkuschitischen Sibilanten. *Afrika und Übersee* 59, 125-142.

Sasse, Hans-Jürgen. 1979. The Consonant Phonemes of Proto-East-Cushitic (PEC): a First Approximation. *Afroasiatic Linguistics* 7/1, 1-67.

Sasse, Hans-Jürgen. 1982. *An Etymological Dictionary of Burji*. Hamburg: Buske.

Savà, Graziano. 2005. *A Grammar of Ts'amakko.* Köln: Köppe.

Tefera, Anbessa & Unseth, Peter. 1989. Toward the classification of Shabo (Mikeyir). In: *Topics in Nilo-Saharan linguistics.Nilo-Saharan*, 3, ed. by M. Lionel Bender. Hamburg: Helmut Buske, 405-418.

Tosco, Mauro. 2001. *The Dhaasanac Language*. Köln: Köppe.

Turton, David & Bender, M.L. 1976. Mursi. In: *The Non-Semitic Languages of Ethiopia*. East Lansing: Michigan State University, 533-561.

Vergari, Moreno & Roberta. 2003. *A Basic Saho-English-Italian Dictionary*. Asmara: Sabur.

Yigezu, Moges & Dimmendaal, Gerrit J. 1998. Notes on Baale. In: *Surmic Languages and Cultures*, ed. by Gerrit J. Dimmendaal & Marco Last. Köln: Köppe, 273-317.

Zaborski, Andrzej. 1983. Basic Numerals in the Omotic Languages. In: *Ethiopian Studies dedicated to W. Leslau* (75th birthday), eds. St. Segert & A.J.E. Bodrogligeti. Wiesbaden: Harrassowitz, 375-390.

Acknowledgements

This study originated in cooperation with the Centre for the Interdisciplinary Research of Ancient Languages and Older Stages of Modern Languages (MSM 0021622435) at Masaryk University, Brno, and thanks to the grant No. IAA901640805.

MOTHER TONGUE

Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

Words for ancient Eurasian food legumes in the languages of the Dene-Caucasian macrofamily

Aleksandar Mikić

Institute of Field and Vegetable Crops, Novi Sad, Serbia[1]

Abstract: The Dene-Caucasian language family has not been precisely defined yet, but it may be said that it is supposed to comprise Basque, Burushaski, (North) Caucasian, Sino-Tibetan, Na-Dene and Yeniseian languages. The goal of this brief essay is to attempt to find out (1) if the member languages of the assumed Dene-Caucasian family have their own words denoting pea, field bean or lentil and, in case they have, (2) if a link has been established between them, bringing a contribution to the hypothesis of their common Proto-Dene-Caucasian ancestor. There is considerable morphological uniformity among the words denoting both pea and field bean within the dialects of the Basque language and the Avar-Andi-Dido group of the Daghestanian languages. Another remarkable morphological similarity in the words denoting pea exists among the dialects of the Burushaski language and the Lak-Dargwa and the Lezgian group of the Daghestanian Caucasian languages. The solution for this phenomenon may lie in the existence of two roots in the Proto-Sino-Caucasian language, **hVwłV*, denoting field bean, and **xqŏrʔā̆ (~ -rɦ-)*, denoting a kernel of cereal. Thus the words denoting the most ancient Eurasian food legumes may represent additional testimony to the common roots of these language isolates and groups and their origin within the Dene-Caucasian family.

Keywords: Dene-Caucasian language super-family (macro-family), etymology, field bean, food legumes, lentil, pea.

In memory of S.A. Starostin.

Introduction

The Dene-Caucasian language family has not been precisely defined yet, but it may be said that it is supposed to comprise Basque, Burushaski, (North) Caucasian, Sino-Tibetan, Na-Dene and Yeniseian languages (Ruhlen 1991). Among historical linguists who actively discuss deep genetic proposals (super-families or macrofamilies), i.e. "palaeolinguists," all the above-mentioned languages (and their hypothetical ancestor, Dene-Caucasian) derive from a yet earlier super-family, Borean, that consists, besides Dene-Caucasian, of several of the generally accepted families of Eurasia, such as Indo-European, Uralic, Altaic, and Afro-Asiatic (Starostin 2006). The idea of the existence of the Dene-Caucasian language family is not new (Swadesh 1987), but it was relatively recently that it was put on firmer ground by the strict linguistic methods that brought together Caucasian, Sino-Tibetan and Yeniseian (Starostin 1991). Later, Burushaski and Basque were also added (Bengtson 1996; Bengtson 1997).

---

[1] Institute of Field and Vegetable Crops, Maksima Gorkog 30, 21000 Novi Sad, Serbia. aleksandar.mikich@gmail.com

brought together Caucasian, Sino-Tibetan and Yeniseian (Starostin 1991). Later, Burushaski and Basque were also added (Bengtson 1996; Bengtson 1997).

It is commonly presumed that all the members of the Dene-Caucasian language family have their ultimate origin in the Proto-Dene-Caucasian language. It is not certain where this language was spoken, but it is likely to have been in central or eastern parts of Asia. With the passing millennia the branches separated, one by one, from the main family tree (Fig. 1), leaving mutually distant 'Dene-Caucasian islands' in the oceans of other language families or, more properly, language isolates, such as Basque, Burushaski or Yeniseian. Although the whole idea still remains strongly opposed and is in the process of developing essentially needed details, progress has been made. Despite the length of the period of separation, some traces of the proto-language may be found in the shared word roots and shared grammars among Basque, Burushaski and the Caucasian languages (Bengtson 2008).

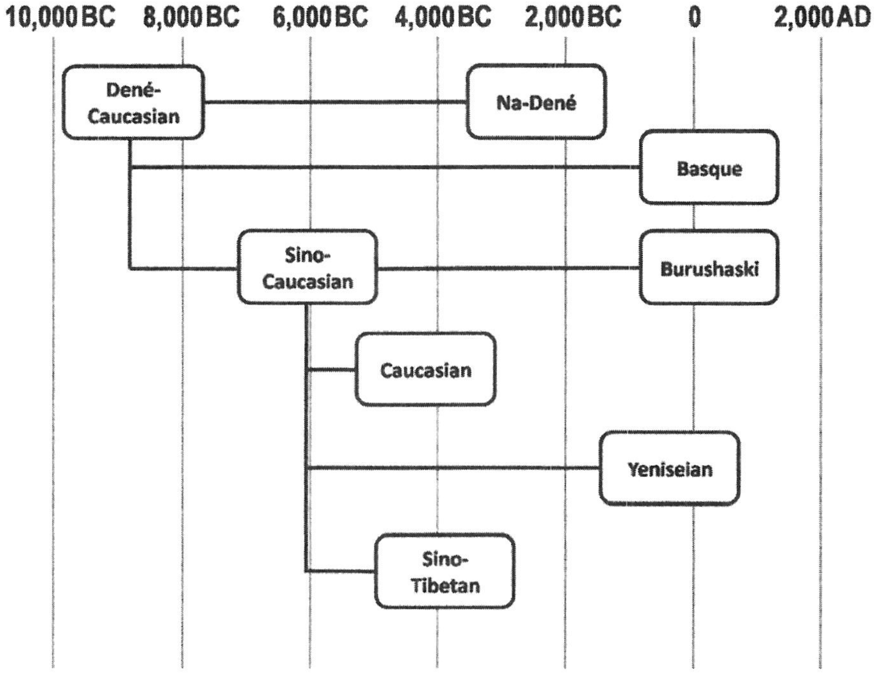


Figure 1. A possible evolution of the Dene-Caucasian language family (Starostin 2006)

Food legumes such as chickpea (*Cicer arietinum* L.), grass pea (*Lathyrus sativus* L.), lentil (*Lens culinaris* Medik.) pea (*Pisum sativum* L.), bitter vetch (*Vicia ervilia* (L.) Willd.), field bean (*Vicia faba* L.) and common vetch (*Vicia sativa* L.) originated mostly in the Near Eastern, Mediterranean and Central Asian centres of diversity (Zeven & Zhukovsky 1975). These plant species have been part of the human diet from time immemorial. At first it was during the Palaeolithic, the age of hunter-gatherers, as attested by well-known findings of lentil and bitter vetch such as the Franchthi cave in Greece, dated to about 11,000

All these food legume species are also among the first domesticated agricultural crops (Zohary & Hopf 2000). Pea, lentil, field bean and the others are found in their cultivated form primarily in Syria, dated to a period between 10,000 and 9,300 years BP (Willcox et al. 2008). From there they began to spread in all directions (Medović et al. 2011). Food legumes took part in the 'agricultural revolution' of post-glacial Europe, climbing up the Danube valley and quickly reaching the continental interior (Ljuština and Mikić 2010). At the same time, that is, several millennia BC, they were cultivated in the Caucasus region (Hovsepyan & Willcox 2008), Central Asia (Miller 1998) and Himalaya (Knörzer 2000).

The goal of this brief essay is to attempt to find out (1) if the member languages of the assumed Dene-Caucasian family have their own words denoting pea, field bean or lentil and, in case they have, (2) whether a link has been established between them, thereby bringing a contribution to the hypothesis of their common Proto-Dene-Caucasian ancestor. The mere fact that these crops have been an important part of the everyday diet of the majority of the Eurasian peoples has provided a basis for this theory and its aim.

Materials and methods

This very preliminary survey of the origin and diversity of the words denoting the most ancient Eurasian pulses in the languages of the hypothetical Dene-Caucasian family has been conducted in three steps:

> 1) To determine the current lexical diversity by searching all available printed and electronic dictionaries of the living languages such as Basque, Burushaski or the Caucasian languages, and collecting all the words that denote pea, field bean and lentil;
>
> 2) To search the existing etymological dictionaries and other relevant linguistic history resources related to the Proto-Dene-Caucasian language and its direct descendants for all the root words related to these three pulses;
>
> 3) To attempt to link the previous two steps and prove the existence of a lexical continuum related to pea and field bean as one of the most ancient Eurasian pulse crops.

In the end, this essay sought to initiate a multidisciplinary approach between social and natural sciences to this complex and interesting issue.

Results and discussion

The words denoting pea were attested in 31 modern Dene-Caucasian languages, namely 3 in the Basque language, 3 in all three existing Burushaski and 25 Caucasian languages (Table 1). This shows the pea to be one of the most widely represented crops in dictionaries and confirms its prominent place in the everyday lives of said peoples. To a somewhat lesser extent, the words denoting field bean were collected in 9 modern Dene-Caucasian languages, namely 4 Basque dialects and 15 Caucasian languages (Table 2).

Table 1. The words denoting pea in the languages of the hypothetic Dene-Caucasian superfamily

Family	Branch	Sub-branches		Language/Dialect	Word
Basque				Bizkaian	*idar, irar*
				Standard Basque	*ilar*
				Zuberoan	*ilhar-biribil;* *ilhar-xuri*
Burushaski				Hunza	*γaráş*
				Nagar	*γaráş*
				Yasin	*γaráş*
Caucasian	Northeast (Nakh-Daghestanian)	Daghestanian	Avar-Andi-Dido	Bagvalal	*hal*
				Botlikh	*hali*
				Chadakolob	*holó*
				Godoberi	*hali*
				Hinukh	*hilu*
				Hunzib	*helu*
				Inkhokvari	*hel*
				Tsez	*hil*
			Lak-Dargwa	Akusha	*qara*
				Chiragh	*qara*
				Dargi	*qara*
				Lak	*qulru*
			Lezgic	Aghul	*xur*
				Archi	*čaq*
				Kryts	*xarxar*
				Lezgi	*nahut; zar*
				Rutul	*xar*
				Tabasaran	*harar; xar*
				Tsakhur	*xara*
		Nakh		Chechen	*qöş*
				Ingush	*gerga qeŝ*
	Northwest (Abkhazo-Adyghean)	Circassian		Abaza	*k'yrk'yrlaš*
				Abkhaz	*k'yrk'yrra*
				Adyghe	*nekhut*
				Kabardian	*cesh*

Table 2. The words denoting bean in the languages of the hypothetic Dene-Caucasian superfamily

Family	Branch	Sub-branches		Language/Dialect	Word
Basque				High Navarrese	*ilar*
				Low Navarrese	*ilhar*
				Lapurdian	*ilhar*
				Zuberoan	*ilhar*
Caucasian	Northeast (Nakh-Daghestanian)	Daghestanian	Avar-Andi-Dido	Andi	*holi*
				Akhvakh	*hali*
				Avar	*holó*
				Bezhta	*holo*
				Chamalal	*hal*
				Karata	*hale*
				Khwarshi	*ħel*
				Tindi	*hali*
			Lak-Dargwa	Lak	*luħi qjuru*
			Lezgic	Archi	*bex:`é čaq*
				Lezgi	*xaru; paxla*
				Tabasaran	*xaru*
		Nakh		Chechen	*qö*
				Ingush	*qe*
	Northwest (Abkhazo-Adyghean)	Circassian		Adyghe	*ceshä*

There is considerable morphological uniformity among the words denoting both pea and field bean within the dialects of the Basque language and the Avar-Andi-Dido group of the Daghestanian languages (Tables 1 and 2). It is notable that in each of these languages the word denotes either pea or field bean, that is, not both of them at the same time. This can be explained in a similar way in both Basque and the Caucasian languages. The attested Proto-Basque **iłhar̄* denoted field bean, pea and vetch (Bengtson 2007) and in some Basque dialects, such as Bizkaian and the Standard Basque, it began to denote pea (Table 1), while in others, such as High and Low Navarrese, it denotes field bean (Table 2). At the same time, the attested Proto-Caucasian root **hōwł(ā)*, denoting both bean and lentil, gave the Proto-Avar-Andi **ħoli* and the Proto-Tsezian **hel(u)*, both denoting pea and bean equally (Nikolayev & Starostin 1994) or, possibly, a pulse crop in general.

Another remarkable morphological similarity in the words denoting pea exists among the dialects of the Burushaski language and the Lak-Dargwa and the Lezgian group of the Daghestanian Caucasian languages (Table 1). The first reason for this phenomenon is the Proto-Burushaski root **γaráṣ*, also denoting pea (Starostin 2005). Another one is the existence of the second Proto-Caucasian root related to food legumes, **qŏrʔā*, denoting solely pea (Nikolayev & Starostin

1994). This root yielded Lak *quIru*,[2] Proto-Dargwa **qara* and Proto-Lezgian **χara*, all also denoting pea and being responsible for the words for this food legume in their modern descendants. In some Lezgian languages, such as Kryts and Tabasaran, a duplication of the initial root occurred and in such form was borrowed by some Northwest Caucasian languages, such as Abaza and Abkhaz (Table 1). It must be added that Proto-Sino-Tibetan **krā (~g~)*, denoting a kernel, in some Tibetan dialects gave rise to *greu*, denoting pea (Starostin 2005).

The remaining attested direct derivative of Proto-Caucasian**qŏrʔā*, Proto-Nakh **qo(w)e*, **qe(w)u*, had a shift from the original meaning from pea to field bean and thus produced the Modern Chechen *qö* and the Modern Ingush *qe* (Table 2). For this reason, the words denoting pea (Table 1) in those two Nakh languages are, in fact, based upon their words denoting field bean. They were also probably borrowed by Northwest Caucasian languages, such as Kabardian, denoting pea (Table 1), and Adyghe, denoting field bean (Table 2), as well as by the neighboring Indo-European languages, namely Ossetic, with *qædur*, denoting field bean, and Kartvelian languages, such as Svan *ghedar*, denoting pea (Mikić 2009).

The second of the two meanings of the Proto-Caucasian root **hōwɫ(ā)*, 'lentil', was preserved in the Lak-Dargwa and Lezgic languages. Proto-Lak *hulū* kept its form in Modern Lak, the Dargi language has a kind of combination in the form of *hulu-qara*, while Proto-Lezgian **hola* gave rise to Modern Tsakhur *hIɨwa*,[3] both denoting lentil (Starostin & Nikolayev 1994). These are the only attested words in the Caucasian languages related to lentil and with a direct connection to its Proto-Caucasian ancestor.

It is rather curious how the differentiation of the initial meaning into two possible successors and morphological conservation occurred in an almost identical way at two geographically distant places, Pyrenees and Caucasus. It is even more remarkable if the analogues in Burushaski or Sino-Tibetan are added. The solution for this phenomenon may lay in the existence of two roots in the Proto-Sino-Caucasian language, that, according to researchers in the Dene-Caucasian family, gave rise to Proto-Basque, Proto-Burushaski, Proto-Caucasian and Proto-Sino-Tibetan (Fig. 2).

---

[2] The sequence /uI/, in Caucasological practice, represents a pharyngealized high-round vowel. [Ed.]

[3] The sequence /hI/ represents a pharyngealized laryngeal fricative [Ed.]

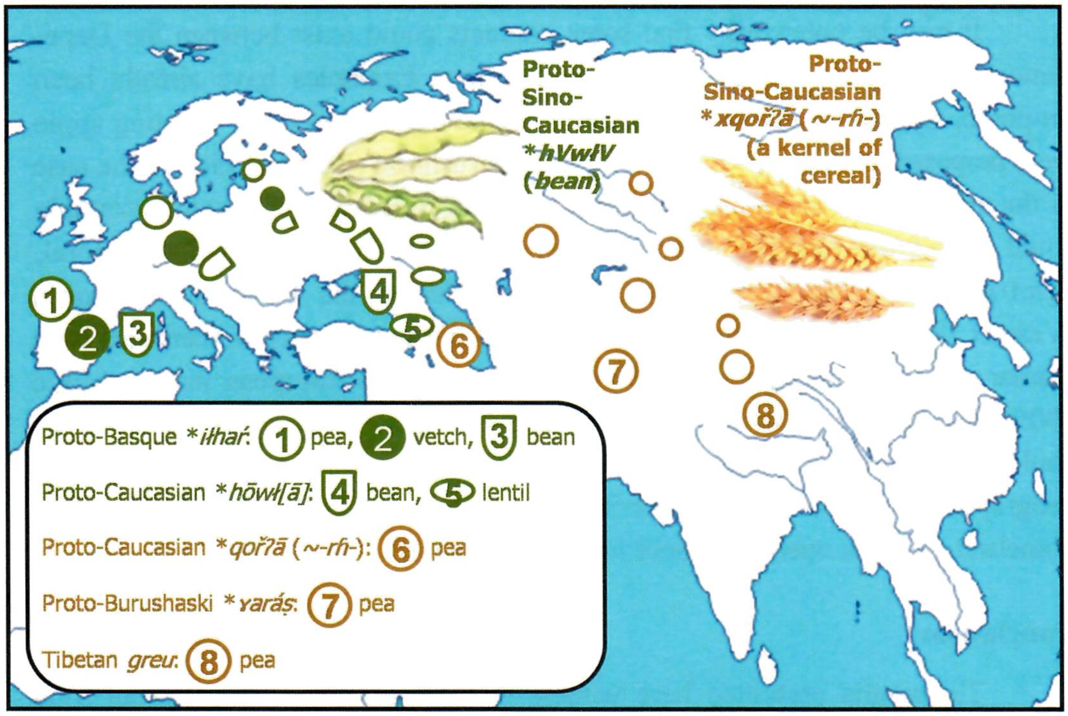

Proto-
Sino-
Caucasian
*hVwłV
(bean)
Proto-
Sino-Caucasian
*xqoř?ā (~-rɦ-)
(a kernel of
cereal)
Proto-Basque *iłhaŕ: ① pea, ② vetch, 3 bean
Proto-Caucasian *hōwł[ā]: 4 bean, 5 lentil
Proto-Caucasian *qoř?ā (~-rɦ-): ⑥ pea
Proto-Burushaski *γaráṣ: ⑦ pea
Tibetan greu: ⑧ pea
①
②
3
4
5
⑥
⑦
⑧

Fig. 2. Evolution of the Proto-Sino-Caucasian roots that gave rise to the words related to the ancient Eurasian food legumes in Basque, Burushaski, Caucasian and Sino-Tibetan languages

One of these two Proto-Sino-Caucasian roots is **hVwłV*, denoting field bean, and another is **xqŏrʔă (~ -rɦ-)*,[4] denoting a kernel of cereal (Starostin 2007). The first one gave rise to the Proto-Basque **iłhar̄* and the Proto-Caucasian **hōwł(ā)*, while another one produced the Proto-Burushaski root **γaráṣ*, the Proto-Caucasian **qŏrʔā* and the Proto-Sino-Tibetan **krā (~ *grā)*. In this way, the words denoting most ancient Eurasian food legumes may represent an additional testimony to the common roots of these language isolates and their origin within the Dene-Caucasian family. Certain genetic research has already made connections between the Basque people and the Caucasian peoples (Cavalli-Sforza & Seielstad 2001), declaring both to be the last remnants of the Palaeolithic population of hunter-gatherers that inhabited Europe during the last Ice Age and retreated deep in the mountains before the bearers of Neolithic agriculture. Also, a mitochondrial DNA analysis tracing a rare subgroup of haplogroup U8 has placed the origin of the Basque people in the Upper Palaeolithic, with their primitive founders originating from West Asia (González et al. 2006), close to the supposed Sino-Caucasian or even Dene-Caucasian homeland.

---

[4] This means that the language data could be explained either by **xqŏrʔă* (with glottal stop) or **xqŏrɦă* (with voiced laryngeal fricative). [Ed.]

It may be noteworthy that some contacts could exist between the Dene-Caucasian and Indo-European language families. Examples have already been proposed, such as the one in which the Proto-Indo-European roots denoting apple were proposed to be borrowings from Proto-Burushaski (Berger 1956). In the case of the most ancient and most traditional Eurasian food legumes, another example could be a Proto-Indo-European root denoting a leguminous plant in general, **ghArs-*, *ghers-*(Nikolayev 2007). This root yielded the Proto-Slavic **gorxŭ* (Vasmer 1953), denoting exclusively 'pea', but did not produce descendants with similar meanings among the other branches of the Indo-European family (Mikić 2009). The question whether this Proto-Indo-European root and its sole survivor could be a borrowing of the Proto-Burushaski **γarắṣ*, especially because of the geographical position of Proto-Slavic tribes in the original Proto-Indo-European homeland, remains open for proper linguistic analysis.

Conclusions

The results presented here witness that the most ancient Eurasian food legumes such as pea, field bean and lentil were well known to the ancestors of the modern Basque, Burushaski, Caucasian and Sino-Tibetan peoples. On the other hand, it is not enough to bring a clear distinction if these species became known from wild Palaeolithic floras or were introduced into their everyday lives as cultivated crops. In case the theory of the existence of the Dene-Caucasian language super-family proves correct, these pieces of evidence may contribute to its firmer establishment and wider acceptance.

Acknowledgements: Evolution of Human Languages at the Santa Fe Institute; and Ministry of Education and Science of the Republic of Serbia.

References

Aura, J.E., Y. Carrión, E. Estrelles & G. Pérez Jordà. 2005. Plant economy of hunter-gatherer groups at the end of the last Ice Age: plant macroremains from the cave of Santa Maira (Alacant, Spain) ca. 12000–9000 B. P. *Vegetation History and Archaeobotany* 14: 542-550.

Bengtson, John D. 1996. A final (?) response to the Basque debate in Mother Tongue 1. *Mother Tongue* 26: http://www.people.fas.harvard.edu/~witzel/mt26s.html

Bengtson, John D. 1997. A comparison of Burushaski and North Caucasian. *Georgica* 20: 88–94._

Bengtson, John D. 2007. Basque etymology. The Tower of Babel, an International Etymological Database Project. http://starling.rinet.ru

Bengtson, John D. 2008. Materials for a comparative grammar of the Dene-Caucasian (Sino-Caucasian) Languages. *Aspects of Comparative Linguistics* 3: 45–118. http://starling.rinet.ru/Texts/dene_gr.pdf

Berger, Hermann. 1956. Names of Mediterranean cultured plants from Burušaski. *Münchener Studien zur Sprachwissenschaft* 9: 4-33.

Cavalli-Sforza, L. L. & M. Seielstad. 2001. *Genes, peoples and languages.* London: Penguin Press.

Farrand, W. R. 1999. *Depositional history of Franchthi cave.* Bloomington: Indiana University Press.

González, A. M., O. García, J. M. Larruga & V. M. Cabrera. 2006. The mitochondrial lineage U8a reveals a Paleolithic settlement in the Basque country. *BMC Genomics* 7: 124.

Hovsepyan, R. & G. Willcox. 2008. The earliest finds of cultivated plants in Armenia: evidence from charred remains and crop processing residues in pisé from the Neolithic settlements of Aratashen and Aknashen. *Vegetation History and Archaeobotany* 17 (Suppl 1): S63–S71.

Knörzer, Karl-Heinz. 2000. 3000 years of agriculture in a valley of the High Himalayas. *Vegetation History and Archaeobotany* 9: 219-222.

Ljuština, M. &, A. Mikić. 2010. A brief review on the early distribution of pea (*Pisum sativum* L.) in Europe. *Ratarstvo i povrttarstvo / Field and Vegetable Crops Research* 47: 457-460.

Medović, A., A. Mikić, B. Ćupina, Ž. Jovanović, S. Radović, A. Nikolić & N. Stanisavljević. 2011. *Pisum & ervilia Tetovac* – Made in Early Iron Age Leskovac. Part One. Two charred pulse crop storages of the fortified hill fort settlement Hissar in Leskovac, South Serbia. *Ratarstvo i povrttarstvo / Field and Vegetable Crops Research* 48: 219-226.

Mikić, A. 2009. Words denoting pea (*Pisum sativum*) in European languages. *Pisum Genetics* 41: 29-33.

Miller, N. F. 1999. Agricultural development in western Central Asia in the Chalcolithic and Bronze Ages. *Vegetation History and Archaeobotany* 8: 13-19.

Nikolaev, S. L. & S. A. Starostin. 1994. *A North Caucasian etymological dictionary.* Moscow: Asterisk.

Ruhlen, Merritt. 2001. Il Dene-caucasico: una nuova famiglia linguistica. *Pluriverso* 2: 76–85.

Shevoroshkin, Vitaly V., ed. 1991. *Dene-Sino-Caucasian languages.* Bochum: Brockmeyer, 12-41.

Starostin, Sergei A. 1991. On the hypothesis of a genetic connection between the Sino-Tibetan languages and the Yeniseian and North Caucasian languages. In: Shevoroshkin (1991), pp. 12-41.

Starostin, Sergei A. 2005. Burushaski etymology. The Tower of Babel, an International Etymological Database Project. http://starling.rinet.ru

Starostin, Sergei A. 2006. Borean tree diagram. The Tower of Babel, an International Etymological Database Project. http://starling.rinet.ru

Starostin, Sergei A. 2007. Sino-Caucasian etymology. The Tower of Babel, an International Etymological Database Project. http://starling.rinet.ru

Swadesh, Mauricio. 1987. Tras la huella lingüística de la prehistoria. Mexico City: Universidad Nacional Autónoma de México.

Vasmer, Max. 1953. *Russisches etymologisches Wörterbuch*, 1 (A – K). Heidelberg: Carl Winters Universitätsverlag.

Willcox, G., S. Fornite & L. Herveux. 2008. Early Holocene cultivation before domestication in northern Syria. *Vegetation History and Archaeobotany* 17: 313–325.

Zeven, A. C. & P. M. Zhukovsky. 1975. *Dictionary of cultivated plants and their centres of diversity.* Wageningen: Centre for Agricultural Publishing and Documentation.

* * * * * * *

Some Notes on the article by Aleksandar Mikić

The extremely complex phonetics of Proto-Dene-Caucasian [PDC][5] (as proposed by S.A. Starostin) can be a stumbling block for some linguists, let alone lay readers. Starostin himself (2004-5)[6] directly attacked this problem as follows:

> I cannot get rid of a feeling that most of the criticism [of Sino-Caucasian (SC)] is due to the complexity of phonological correspondences between the languages in question. Unfortunately, this is not something that can be amended through any amount of additional research. Correspondences between very complex phonological systems – and SC, especially NC [North Caucasian] systems probably belong to the most complex in the world – are bound to be complex. So if the reader wants to see a plain and simple system of correspondences between SC families, he might as well stop reading this text right now and join the camp of critics.

In regard to the PDC forms cited by Mr. Mikić, some further explanations could help. PDC **hVwłV* 'legume' is quite simple, as PDC forms go, with uncertainty of both vowels represented by /V/, and /ł/ representing a back or velar lateral. The proposed Basque cognate **iłhar̄* assumes a metathesis of **h* and **ł* (not uncommon in the development of Basque: cf. Bsq **mułho* 'small hill' in relation to PNC **muɦalV* 'mountain') and a very common suffix *-*r̄* (apparently a fossilized plural suffix, also common in NC languages as -*r*).

The other PDC word cited, **xqŏrʔā̆ (~ *xqŏrɦā)* 'grain or legume', is more complex. The hypothetical cluster **xq* was proposed by Starostin (2004-5: 79) to explain "correspondences where PNC has uniformly uvulars and PST ... velars. Yenisseian and Burushaski ... both reflect plain "xq" clusters as uvulars." This **xq* may be understood as a kind of algebraic way of representing a proto-phoneme of unknown phonetic quality (or combination of segmental and suprasegmental features) that produces the outcome **K* in Sino-Tibetan vs. **Q* in the other languages.[7] The proposed Burushaski reflex **γaráṣ* has the initial voiced uvular fricative /γ/ (also transcribed as /ġ/, *e.g.* by Hermann Berger). The Bur suffix -ṣ (retroflex sibilant) is also frequent: cf. Bur **maltá-ṣ* 'butter' in relation to PNC **nħĕλ̱V* 'milk, milk product' (Chechen *nalχa* 'butter', etc.). [Ed.]

---

[5] The terms "Sino-Caucasian" and "Dene-Caucasian" can be considered more or less synonymous. S.A. Starostin himself used only the former, since he never worked directly with the Na-Dene component, though he considered the inclusion of Na-Dene in the family to be quite probable. The term "Dene-Caucasian" was popularized after the the publication of Shevoroshkin's (1991) book and other publications such as Ruhlen (2001) [see above].

[6] Starostin, Sergei A. 2004-5. Sino-Caucasian [Phonology]. The Tower of Babel, an International Etymological Database Project. http://starling.rinet.ru/Texts/scc.pdf

[7] **K* here representing all velars and **Q* all postvelars/uvulars. Basque, in accord with western European areal preferences, has only **K* reflexes (also **h* corresponding to the PDC fricatives **x* and **χ*) (Bengtson 2008).

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

Brian Houghton Hodgson: a pioneer of the Sino-Caucasian hypothesis

John D.Bengtson
Association for the Study of Language in Prehistory
and *Evolution of Human Language Project*

Brian Houghton Hodgson (1800[?] – 1894) was a British civil servant who developed into a scholar of ethnology, linguistics, religious studies, and biology (natural sciences, especially ornithology). Due to his extensive work as a naturalist several birds and plants have been named after him, with the designations *hodgsoni* or *hodgsonii*.

Hodgson, from Cheshire, England, first went to India at the age of seventeen as an employee of the British East India Company. For the next four decades, more or less (1818- 1858), Hodgson lived and worked in Greater India, mainly in the Himalayan regions, and made many contributions to the biology, ethnology and linguistics of these areas, including some of the first records of Kusunda (see *Mother Tongue* III). Some selected articles and books of his are listed in the References, below.[8]

In 1853 his article "On the Mongolian Affinities of the Caucasians" was published. After some notes on structural and grammatical similarities, Hodgson listed about 25 pages of lexical comparisons between "Caucasian" languages and "Mongolian" languages. Hodgson's "Caucasian" languages included, besides the expected (North) Caucasian and Kartvelian, some Indo-European languages of the Caucasus region (Armenian, Ossetic, Kurdish), and his "Mongolian" languages occasionally included "Siamese" (Thai), Malay, Mongol, and Manchu; but most of his "Mongolian" examples were Tibeto-Burman, and his focus was mainly on West Caucasian and Tibeto-Burman. From our advantageous perspective today, after many decades of taxonomic progress, this article looks very crude – but remember, this was the 1850s, when the reconstruction, and even the membership, of Indo-European was still very hazy and unsettled! Most of the well-known language families we now take for granted were still unknown.

I have sifted through Hodgson's etymologies, and, as one might expect, the majority of the comparisons can be questioned and even repudiated (for various phonological and taxonomic reasons), but occasionally Hodgson struck pay dirt, and in a few cases his parallels are essentially identical with those put forth as Sino-Caucasian (SC)[9] etymologies by Sergei Starostin (1984, 1991) some 130 years later, for example:[10]

---

[8] I am indebted to the Wikipedia article about Hodgson, as seen in February 2012: http://en.wikipedia.org/wiki/Brian_Houghton_Hodgson

A. **'salt':** Kubitsh [Kubachi Dargwa] *T'shé-a* [c:e = t^{s}:e], Akush [Dargwa] *D'zé* [ze], Dido [Tsez] *Zi-o* [cijo = t^{s}iyo]
= Tibetan *T'sha* [chwa], Burmese *Shá* [ćhah], Khyeng [Chin?] *T'si*, Takpa *T'sá*, Gyarung *Chá-chá*, Newari *Chi*, etc.
B. **'dog':** Circassian *Khá* [ħa], Kubitsh [Kubachi Dargwa] *Kó-a* [χ:^{w}e], Dido [Tsez] *Gwai* [ʁ̣^{w}aj],[11] etc.
= Tibetan *Khyi*, Burmese *Khwé* [khwiyh = khwê], Garo *Ká-í*, etc.
C. **'ear':** Tshari [Zakatal Avar] *Ain*, [literary] Avar *Ain* [ʕin]
= Burmese *Ná* [nah], Tibetan *r Ná* [r-na], Limbu *Né-ko*, Gurung *Ná-bé*, etc.
D. **'blood':** Dido [Tsez] *Í, E´* [e], Andi *Hí-n* [hin]
= Newari *Hí*, Dhimali *Hi-ki*, Magar *Hyú*, etc.
E. **'four':** Circassian [Adyge, Kabardian] *p Sí* [p̓ƛ̓ə],[12] Abassian [Abkhaz-Abaza] *p Shi* [pš́ə-ba]
= Tibetan *b Zhi* [bźi], Lhopa *Zhi*, Serpa [Sherpa] *Zhyi*, etc.,
F. **'ten':** Circassian *p Shé-n* [p̓š̓ə], Abassian [Abkhaz-Abaza] *Zhé-ba* [ž^{w}a-ba]
= Tibetan *Chú* [bću, bćo], Burmese *Sha-i* [ćhaj], Kami *Sú*, Garo *Chi* [ći], Takpa *p-Chi*, Gurung *Chá*, etc.

Besides lexical cognates Hodgson perceptively noted some important grammatical similarities, such as those concerning numerals and their prefixes. Regarding the "four" comparison Hodgson (p. 59) noted: "Both root and servile are identical in all five words; another marvelous instance of concord, capable, like the rest, of only one explanation." By "servile" (affix) he meant the prefixed *p-* or *b-* in Circassian (Adyge, Kabardian), Abkhazian and Tibetan. Cf. also Ubykh *p̓ƛ̓ə* '4'; in Sino-Tibetan (ST): Trung *bli*^{2}, Magar *buli*, Garo *bri*, Dimasa *biri*, Mikir *phli*, Lushai *pali*, etc. (see full etymology in **Appendix A**, below). The same structure is evident in some of the East Caucasian words for '8', *e.g.*: Tindi,

---

[9] "Sino-Caucasian" proper (as used by S.A. Starostin) consisted of (North) Caucasian + Sino-Tibetan + Yeniseian. Later in life S.A. Starostin included Burushaski (see Starostin 2005a), somewhat less firmly Basque (see Starostin 2005b) and Na-Dene (as proposed by S.L. Nikolayev, stimulated by E. Sapir's and R. Shafer's comparisons of Sino-Tibetan + Na-Dene). Following the publication of the book *Dene-Sino-Caucasian Languages* (Shevoroshkin 1991) the term "Dene-Caucasian" became more frequent in referring to the expanded macro-family.

[10] Modern language names and transcriptions are given in brackets [ ].

[11] *I.e.*, the initial is a pharyngealized voiced uvular fricative(!).

[12] *I.e.*, the initial cluster is glottal labial + glottal lateral fricative. The transcription [S] might indicate that the voiceless lateral fricative (like Welsh *ll*, but glottalized in this word) was heard as a sibilant.

Karata, Botlikh, Godoberi *biƛ̓:i*-da, Khwarshi *baƛa*, Archi *meƛe*,[13] Tsakhur *moli*-llä, etc. '8' (see full etymology, **Appendix A**).

That the "marvelous concord" observed by Hodgson is not a fluke is indicated by other Caucasian and Sino-Tibetan numeral words with prefixes, and sometimes with the numeral root also being cognate (in S.A. Starostin's model of Sino-Caucasian). See Table 1:

Table 1: Some Caucasian and Sino-Tibetan numeral words

	West Caucasian		**East Caucasian**		**Sino-Tibetan**	
	PWC reconstruction	attested	PEC reconstruction	attested	PST reconstruction	attested
2_1	***d**-ɢʷə (Ç) = ***t**-qɪ́:ʷA (NS)	Ubykh t̓q̓ʷa, Adyg., Kab. t̓ʷə, Abkh. ʕʷ-ba, Abz. ʕʷ-ba	*q̇ʜwä̅ NCED 924	Bezhta q̓o-no Lak k̓i=a Udi p:a˛ Khinalug k̓u, etc.	?	? Jingpho **lə**-khôŋ Rengma **kho**-hɨŋ (Karen *khi)
2_2	*nəč̓ə 'ram slaughtered in honor of a guest' (< '*2-yr.-old ram')	Adyge nəš̓ə, Kab. nəš, Ubykh nəč̓ə́ 'ram slaughtered in honor of a guest'	*nǟwš̱i '2' NCED 845	Chechen šiʔ '2', Lak nuwš:a 'ram (more than **2** y. old)', etc.	***g**-nis (BM) = ***k**-nĭj(s) (PS)	Tibetan **g**-nyis Garo **g**-ni Dimasa **gi**-ni Tangkhul **khə**-ni Lushai **h**-niʔ
3			*ś̱wimʜᴠ[14] NCED 978	Lak šam=a '3' Khinalug pšʷa '3'[15] Tabasaran simi-c̓ur '30'	***g**-sum (BM) = *sɨ̄m (PS)	Tibetan **g**-sum Garo **gi**-thom Dimasa **gă**-thām Jingpho **mə**-sum^{1} Lushai **pa**-thum
4	***p̓**-λ̓'ə (Ç) = ***p**(:)-əƛ̣ə (NS)	Adyg., Kab. **p**λ̓ə Ubykh **p**ƛ̓ə Abkhaz,	***b**ǖnȽ̱e '8' NCED 314	Tindi **b**iƛ̓:i-da '8' Khwarshi **b**aƛa '8'	***b**-ləy (BM) = ***P**-lĭj (PS)	Tibetan **b**-źi Trung **b**-li^{2} Magar **bu**-li Garo **b**-ri

---

[13] Where /ƛ/ represents the "tl"-like lateral affricate, and /ƛ̓/ is the same glottalized.

[14] This is obviously similar to Proto-Kartvelian **sam*- '3' > Georgian *sam*-i, Megrelian *sum*-i, Laz *sum*, Svan *semi* '3' (Klimov & Xalilov 2003). This root has no deeper history in other Nostratic (Eurasiatic) languages, and thus PK **sam*- is most likely a loanword from (North) Caucasian, since the PNC root **ś̱wimHV* does have a deeper history in Sino-Caucasian (PST **sɨ̄m*, PY **doʔŋa* '3'). The archaic PNC root **ś̱wimHV* '3' was apparently lost by West Caucasian and most of East Caucasian, replaced by the innovation **ƛHĕ* '3' (NCED 768, 978).

[15] Khinalug *p*- does not reflect a prefix; *pšʷ* is simply a regular development of PEC **ś̱w* (NCED 50).

	West Caucasian		**East Caucasian**		**Sino-Tibetan**	
	PWC reconstruction	attested	PEC reconstruction	attested	PST reconstruction	attested
		Abaza **p**š́ə-ba		Archi **me**ƛe '8', etc.		Jingpho **mə**-li[1]
5	***t**-xʷə (Ç) = ***s**-xʷə (NS)	Ubykh š́xə Ad. **tf**ə Kab. **tx**ʷə	*f̱ħă NCED 426[16]	Chechen pχiʔ Avar š:ú-go Tsez ƛi-na Lak χ:uˌ- Agul ʕa-fu-d, etc.	***l**-ŋa ~ ***b**-ŋa (BM) = *ŋāʜ (PS)	Tibetan **l**-ŋa Jingpho **mə**-ŋā Gyarung **kə**-mŋo Garo **bo**-ŋa Lushai **pa**-ŋa
6			*ʔrā̆nƛ̱E NCED 219	Chechen jalχ Lak raˌχ:- Chirag rek:- Lezgi rugu-d Rutul rixɨ-d, etc.	***d/k**-ruk (BM) = *rŭk (PS)	Tibetan **d**-rug Lepcha **tă**-răk Mikir **the**-rok Burmese **kh**-rauk Jingpho **k**-ruʔ[3] Lushai **pa**-ruk
10	*žʷa (Ç) = ***b**-ḉ̣ʷə (NS)	Adyge, Kabardian **p**̓ś̂ə Abkhz žva-ba, Abaza žʷa-ba Ubykh žʷə	*ʡĕnç̣Ĕ NCED 245	Dargwa **w**-ec̓- Archi **w**-ic̓- Udi **w**-ic: Tab. **j**-ic̓u-	*ts(y)i(y) ~ *tsyăy (BM) = *[ʒ́h]Vj (PS)	Tibetan **b**-ću / **b**-ćo Lepcha **kă**-ti Burmese ćhai Lahu ćhi Jingpho ćī, śī

Table 1 does not list all Caucasian and Sino-Tibetan numerals, of course, an exercise that would require many more pages. The idea here is to compare some of the numeral words that exhibit prefixes in either Caucasian languages or Sino-Tibetan languages, or both. In the row designated as **2_1** there is firm evidence for a prefix in WC, while none of the EC words have prefixes, and the putative ST cognates (with different prefixes from WC) are isolated and dubious (most ST languages have the root designated as **2_2**). For the root **2_2** none of the Caucasian words have prefixes (and in most of them the root is no longer a numeral but a noun apparently referring originally to a '2-year old ram'). For **3** prefixes are found only in ST (original **g-* or **k-* replaced by other prefixes in some languages, and dropped in others: Burm. *sûm*, Meithei *húm*, etc.). For **5** various prefixes are found in WC and ST (though the cognation of the root is dubious: see footnote). For **6** prefixes are found only in ST, and the root itself appears only as a relic in some EC languages.[17]

---

[16] PNC **f̱ħă* '5' and PST **ŋāH* '5' are considered to be cognate in S.A. Starostin's Sino-Caucasian. The putative correspondence of PNC **f̱* and PST **ŋ* is rather unexpected, and supported by only four etymologies in Starostin (2005a: 50), including PNC **f̱anħV* 'fish' = PST **ŋ(j)ă* 'fish' (Starostin 2005: 232).

We are then left with **4** and **10** as the most satisfactory etymologies, from the standpoint of establishing firm cognates of both prefix and root. In both of these a labial prefix (**p-, *b-, *w-*) appears to be original. Cf. also Burushaski **w-alt-* ‘4’ (with labial prefix), and **alt-* ‘2’ without the prefix.[18] (See below for the possible morphological interpretation of these and other prefixes.) So Hodgson in 1853 was already on to two of the clearest SC numeral etymologies.

As noted by Benedict and Matisoff the more conservative Tibeto-Burman languages reflect what is apparently the older ST pattern of mixed prefixes on numerals, *e.g.*:

Tibetan ***g***-*nyis* ‘2’, ***g***-*sum* ‘3’, ***l***-*ŋa* ‘5’, ***d***-*rug* ‘6’,
Dimasa ***gi***-*ni* ‘2’, ***gă***-*thām* ‘3’, ***bo***-*ŋa* ‘5’, *do* ‘6’ (< *****d****-rŭk*)

In contrast to this, some ST languages have regularized their numeral paradigms by generalizing the prefixes. *E.g.*, “Jingpho has created a “prefix run” in the numerals ‘3’, ‘4’, and ‘5’, by substituting its **mə-** prefix for the presumably original prefixes still to be found in W[ritten]T[ibetan” (Matisoff 94, 135):

Table 2: Prefix leveling in some Sino-Tibetan (Tibeto-Burman) languages

	Tibetan	Jingpo	Gyarung	Lushai
3	**g**-sum	**mə**-sūm	**kə**-sam	**pa**-thum
4	**b**-źi	**mə**-lī	**kə**-wdi	**pa**-li
5	**l**-ŋa	**mə**-ŋā	**kə**-mŋo	**pa**-nga

Other ST languages have dropped the prefixes altogether, *e.g.*: Limbu *li*-si, Burmese *lê*, Pwo Karen *li*, Sgaw Karen *lwi* ‘4’ (cf. Basque *lau* ‘4’). Yet further, in some ST languages of the Lolo group the words for ‘4’ have been reduced to single vowels, *e.g.* Lahu ***ɔ̂***, Akha ***ø̀*** ‘4’ (Matisoff 2003: 192)

By the time of our earliest recordings of Caucasian and Sino-Tibetan languages the grammatical functions of these prefixes were already totally lost, or at least obscured. As Benedict (1972: 96) states it: “Certain of these prefixes (**g-, *b-, *l-, *d-*) have already been pointed out in connection with the numerals. In many instances, as here, no function can be assigned to these elements, i.e. loss of morphological utility had already occurred in proto-TB times.” But their patterning, along with evidence from other Dene-Caucasian languages, indicates that they are probably related in some way to the SC class prefixes (Bengtson

---

[17] But see Blažek (2010) for an alternative etymology of PST **d/k-ruk / *rŭk* ‘6’.

[18] Within Burushaski the morphonemic relationship of /b/ and /w/ is well established, *e.g.* Nager Burushaski *baṭ* ‘skin’ (free morpheme), alternating with *-waṭ* ‘skin’ as a bound morpheme (Berger 1998: I: 45).

2008: 81ff.). Among the East Caucasian words for ‘ten’ “several ... subgroups [Dargwa ***w***-*ec̓-*, Archi ***w***-*ic̓*, Udi ***w***-*ic:*; Tabasaran ***j***-*ic̓u-*, Rutul, Tsakhur, Kryz, Budukh ***j***-*ic̓ɨ-* ‘10’] reflect class prefixation (**u*- or **j*-); in PWC [****b***-*ć̣ʷə* ‘10’] the initial labial also goes back to a class prefix ...” (NCED 246). Apparently the same can be said of **b*- in Tibetan ***b***-*ću* ~ ***b***-*ćo* ‘10’.

* * *

This comparison of Hodgson’s 1853 work with present-day Dene-Caucasian theory highlights some important points: our twenty-first century versions of Dene-Caucasian and Nostratic (as well as of Afro-Asiatic, Nilo-Saharan, Khoisan, Austric, and other long-range hypotheses) have been gradually and painstakingly built by generations of scholars. Frequently, as we have seen here, the ground laid by pioneers such as Hodgson is cultivated and weeded by a succession of later scholars, until finally only a small fraction of the original material remains. But the same process that causes some lexical etymologies and grammatical paradigms to be refined, trimmed down, or eliminated leads to the discovery of phonological and morphological rules that allow the discovery of yet more “new” etymologies and paradigms.

The demand by some that long-range taxonomic proposals must be perfect and complete from the outset, in order to be taken seriously, is easily seen to be unreasonable. The ultimate goal, “ . . . a taxonomy of human languages – convincing to linguists – which makes possible a universal family tree . . . of modern people,”[19] will only be realized after several generations of scholars have gone through the stages exemplified here by B.H. Hodgson, followed by significant contributions from Trombetti, Sapir, Bouda, and others, culminating in the present-day Sino-Caucasian hypothesis. Even then the job is never finished, as we continue to work toward better and better approximations of the best expanatory models.

* * * * * * *

---

[19] The quote is from the ASLIP mission statement, written by founder Harold C. Fleming: “One test of [the Ur-Human proto-language] is to show a taxonomy of human languages – convincing to linguists – which makes possible a universal family tree and ultimately the reconstructions of major cultural events associated with the evolution of modern people.” http://www.aslip.org/

Abbreviations

BM	Proto-Tibeto-Burman reconstruction by Benedict & Matisoff (Benedict 1972; Matisoff 2003)
Bsq	Basque
Cauc	Caucasian (North)
Ç	Proto-West Caucasian reconstruction by Sadz Çirig (Chirikba 1996)
K	Old Chinese reconstruction by B. Karlgren (as cited in Matisoff 2003)
NS	Proto-West Caucasian reconstruction by Nikolayev & Starostin (NCED)
PEC	Proto-East Caucasian
PNC	Proto-(North) Caucasian
PS	Sino-Tibetan reconstruction by Peiros & Starostin (1996)
PSC	Proto-Sino-Caucasian
PST	Proto-Sino-Tibetan
PWC	Proto-West Caucasian
PY	Proto-Yeniseian
S	Old Chinese reconstruction by S.A. Starostin (Peiros & Starostin 1996)
SC	Sino-Caucasian (more or less = "Dene-Caucasian"; see Shevoroshkin 1988)
ST	Sino-Tibetan
TB	Tibeto-Burman

Selected References

Benedict, Paul K. 1972. *Sino-Tibetan: A Conspectus*. Ed. by J.A. Matisoff. Cambridge University Press.

Bengtson, John D. 2008. "Materials for a Comparative Grammar of the Dene-Caucasian (Sino-Caucasian) Languages." *Aspects of Comparative Linguistics*, v. 3, pp. 45–118. Moscow: RSUH Publishers. http://starling.rinet.ru/Texts/books.php?lan=en

Bengtson, John & Václav Blažek. 2011. "On the Burushaski-Indo-European hypothesis by I. Časule." *Journal of Language Relationship / Вопросы языкового родства* 6: 25-63. http://www.jolr.ru/files/%2866%29jlr2011-6%2825-64%29.pdf

Berger, Hermann. 1998. *Die Burushaski-Sprache von Hunza und Nager.* 3 vols. (Neuindische Studien 13.) Wiesbaden: Otto Harassowitz.

Blažek, Václav. 2010. "Yeniseian Numerals." *Mother Tongue* 15: 101-118.

Chirikba, Viacheslav A. (Çirig, Sadz) 1996. *Common West Caucasian.* Leiden: Research School CNWS.

Hodgson, B.H. 1841. *Illustrations of the literature and religion of the Buddhists.* Serampore: Self published.

Hodgson, B.H. 1847a. *On the Kocch, Bódo and Dhimál tribes.* Calcutta: Baptist Mission Press.

Hodgson, B.H. 1847b. "On the Aborigines of the Sub-Himalayas." *Journal of the Asiatic Society of Bengal* XVI.2: 1235-1246.

Hodgson, B.H. 1853. "On the Mongolian Affinities of the Caucasians." *Journal of the Asiatic Society of Bengal* XXII: 26-76.

Hodgson, B.H. 1856. "Aborigines of the Nilgiris." *Journal of the Asiatic Society of Bengal*, XXV: 31–38 , 498–522.

Hodgson, B.H. 1857. "Comparative Vocabulary of the Broken Tribes of Nepal." *Journal of the Asiatic Society of Bengal* XXVI.5.

Hodgson, B.H. 1858. "On the Kiranti tribe of the Central Himalaya." *Journal of the Asiatic Society of Bengal* XXVII: 446-456.

Hodgson, B.H. 1874. *Essays on the Languages, Literature and Religion of Nepal and Tibet.* London: Trubner and Co.

Hodgson, B.H. 1880. *Miscellaneous essays relating to Indian subjects*. London: Trubner and Co.

Klimov, G.A., and M.Š. Xalilov. 2003. *Slovar' kavkazskix jazykov: Sopostavlenie osnovnoj leksiki.* Moscow: Vostočnaja literatura.

Krauss, Michael E., and Jeff Leer. 1981. *Athabascan, Eyak, and Tlingit Sonorants.* (Alaska Native Language Center Research Papers, No. 5.) Fairbanks: Alaska Native Language Center.

Matisoff, James A. 2003. *Handbook of Proto-Tibeto-Burman: System and Philosophy of Sino-Tibetan Reconstruction*. Berkeley / Los Angeles / London: University of California Press.

NCED = Nikola(y)ev, Sergei L. & Sergei A. Starostin. 1994. *A North Caucasian Etymological Dictionary.* Moscow: Asterisk Press.

Peiros, Ilia, and Sergei A. Starostin. 1996. *A Comparative Vocabulary of Five Sino-Tibetan Languages.* 6 fascicles. Melbourne: University of Melbourne, Department of Linguistics.

Shafer, Robert. 1966-74. *Introduction to Sino-Tibetan*. 5 vols. Wiesbaden: Harrassowitz.

Shevoroshkin, V. 1991. (Ed.) *Dene-Sino-Caucasian Languages.* Bochum: Brockmeyer.

Starostin, S.A. 1984. "Gipoteza o genetičeskix svjazjax sinotibetskix jazykov s enisejskimi i severnokavkazskimi jazykami." ["On the Hypothesis of a Genetic Connection Between the Sino-Tibetan Languages and the Yeniseian and North Caucasian Languages."] In *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka* [*Linguistic reconstruction and ancient history of the East*], part 4, pp. 19-38. Moscow: Akademija Nauk, Institut Vostokovedenija. [see Starostin 1991]

Starostin, S. A. 1991. "On the Hypothesis of a Genetic Connection Between the Sino-Tibetan Languages and the Yeniseian and North Caucasian Languages." In Shevoroshkin 1991: 12-41. [Translation by W.H. Baxter III of Starostin 1984.] http://www.nostratic.ru/books/%2877%29starostin-hypothesis.pdf

Starostin, S. A. 2005a. "Sino-Caucasian [Phonology]." Ms. http://starling.rinet.ru/Texts/scc.pdf

Starostin, S. A. 2005b. "Sino-Caucasian [Glossary]." Ms. http://starling.rinet.ru/Texts/glossary.pdf

Appendix A: B.H. Hodgson's 1853 "Caucasian-Mongolian" comparisons "in modern dress"[20]

A. **'salt':** Proto-North Caucasian (PNC) ***ç̣wĕnhV*** 'salt' > Chechen *tuχa*, Ingush *tuχ*, Batsbi *tujχĭ*; Avar *c̓:am*, Andi *c̓:on*, Akhwakh *c̓:ani*, Chamalal *ṣā̃*, Tindi *c:ā̃*, Karata *c̓:aji*, Botlikh, Bagwali *c̓:aʔi,* Godoberi *c:aji*; Tsez *cijo*, Hinukh *čijo*, Khwarshi *cĩjo*, Bezhta *ca*, Hunzib *cɔ̃*; Lak *c̓ʷu*; Dargwa *ze,* dial. *c:e* 'salt'; Abkhaz *a-c̓ā́*, Abaza *c̓-ʕa* 'salty' // Proto-Sino-Tibetan (PST) ***tsa*** (BM)[21] = ***C[u]āj*** (PS)[22] 'salt' > Old Chinese 鹺 **dz'â* (K)[23] = **ʒāj* (S)[24] 'salt, salty'; Tibetan *chwa* 'salt', Gurung, Murmi *tśa-tśa*, Kanauri *cha*, Burmese *ćhah*, Bola *tha,* Pumi Dayang *tshĭ*, etc. // ? Na-Dene: cf. Navajo *'á-shį̨ih* [ʔá-šĩ:h] 'salt'.

B. **'dog':** Basque ***ho / *ho-r*** 'dog' > Zuberoan *ho, hor*, Low Navarrese *hor*, Common Basque *or* 'dog'[25] // PNC ***χHwĕje*** 'dog' > Batsbi *pħu* 'dog', Chechen, Ingush *pħu* 'male dog'; Avar *hoj* (*hoy*), Andi *χʷoj*, Akhwakh *χʷē*, Chamalal, Karata, Botlikh *χʷaj,* Tindi *χʷā*, Bagwali *hʷaj*, Godoberi *χʷaji* 'dog'; Tsez *ʁ̨ʷaj*,[26] Hinukh, Khwarshi *ʁʷe,* Bezhta *wo*, Hunzib *wə* id.; Dargwa *χ̨a* (Chirag *χ̨:ʷa*); Tabasaran *χuj*, Agul *ʁuj,* Rutul *χij*, Tsakhur *χʷa*, Kryz *χʷa-r*, Budukh *χo-r* [cf. Basque **ho-r*], Udi *χ̨a*; Khinalug *pχra*; PWC *Ł̨ʷa[27] (NS)[28] = **Hʷa* (Ç)[29] 'dog' > Abkhaz *a-lá*, Abaza *la*, Adyge, Kabardian *ħa*, Ubykh *w̨a* 'dog'. The Proto-East Caucasian oblique base was **χHwĕj-rV-*. In some languages (Kryz, Budukh, Khinalug) the former oblique base became the direct form. // PST ***kʷəy, *kʷəy-n***

---

[20] These etymologies are based on those compiled by Starostin (2005b), supplemented with material from Benedict (1972), Chirikba (1996), Matisoff (2003), NCED, Peiros & Starostin (1996), Shafer (1966-74), and files of the Evolution of Human Language Project.

[21] BM indicates Tibeto-Burman model of reconstruction favored by P.K. Benedict and J.A. Matisoff (see Benedict 1972; Matisoff 2003).

[22] PS indicates the Sino-Tibetan model of reconstruction favored by I. Peiros and S.A. Starostin (see Peiros & Starostin 1996).

[23] K indicates the Old Chinese model of reconstruction favored by B. Karlgren (cited in Matisoff 2003).

[24] S indicates the Old Chinese model of reconstruction favored by S.A. Starostin (see Peiros & Starostin 1996).

[25] Basque **hor* 'dog' seems to correlate with the PEC oblique base **χHwĕj-rV* (cf. , with the form **ho* (recorded only in the Zuberoan dialect) corresponding to the direct base **χHwĕje* (cf. Avar *hoy*, Bezhta *wo*). **hor* 'dog' has been displaced in most Basque dialects by the synonym **sakuř* (*zakur, txakur, xakur*).

[26] The symbol [˛] in this and other words (see also the Dargwa, Udi, Ubykh forms) indicates pharyngealization of the preceding consonant (NCED [I]).

[27] A very odd change of voiceless uvular fricative to pharyngealized voiced lateral affricate (!), but it appears to be regular in at least two roots. See NCED (61, 561, 1074) and the oddly similar form in Proto-Kiranti **khlè* 'dog' (Thulung *khlea*, etc.).

[28] NS indicates the Proto-West Caucasian model of reconstruction favored by Nikolayev & Starostin (see NCED).

[29] Ç indicates the Proto-West Caucasian model of reconstruction favored by Sadz Çirig (see Chirikba 1996).

(BM) = ***qhʷīj, *qhʷī-n*** (PS) ‘dog’ > Old Chinese 犬 **k'i̯wən* (K) = **khʷī-n* (S) (> Beijing *ćhyan*^{2}, Guangzhou *hyn*^{21}, Shanghai *ćhyö*^{1}, etc.); Tibetan *khji* (*khyi*), Digaro *nkwi*, Magar *tśiu*, Chepang *kujʔ* = *kwi*, Thulung *khlea, khleya, khlewa,* Bahing *khli*-tśa, Kaling *khle*-p, Kulung *khe*-ba, Limbu *khyā*-bā; Burmese *khwijh* = *khwê*, Maru *kha*, Mpi *khɯ*^{2}, Lahu *phɨ̂*;[30] Samong (Hpon) *təkhwi*, Kachin (Jingpho) *gui*^{2} = *gwì*, Jili *təkwi*, Nung *təgi*, Trung *də*^{3}-*gə*^{1}; Mikir *hi*, Mru *tă-kui*^{1}, Lushai *ui*; Tiddim *ʔwi*, Chokri Naga *tiši*, Angami Naga *tèf̣ə́* (< **d-kʷəy*); Karen *thwi* ‘dog’[31] // Na-Dene: cf. Eyak *χəwa·* ‘dog’, *χəma* ‘growl’, Athabascan **-γ̣ʷən* ‘growl’ (Navajo *-ghą́ą́*, Tanaina *-ɣ̣ən,* Hupa *-wan,* etc. Krauss & Leer 1981: 71, 141); Haida (Alaskan) *χa* ‘dog’, *χā́y* ‘the dog’, (Skidegate) *χa, χā* ‘dog’.

C. **‘ear’:** PNC ***ʕwănʕV*** ‘ear’ > Avar *ʕin*, Andi *han*-t̄ik̓a, Akhwakh *hã*-de, Chamalal *anna*, Tindi *han*-k̄̓it̓a, Karata *han*-t̄ik̓a, Botlikh *han*-t̓uk̓a, Bagwali *ha*-k̄̓it̓a; Tsez *aħja*, Hinukh *aχχa*, Khwarshi *ãħĩ*, Bezhta *äʁä*, Hunzib *ãʁa*; Proto-Lezgian **ʔ̨am:* ‘ear’[32] > Lezgi *jab*, Tabasaran *ib*, Agul *ib-ur*, Rutul *ub-ur*, Kryz *ib-ɨr*, Budukh *ib-ir*; Udi *im-uχ* ‘ear’. // PST *r/g-***na*** (BM) = ****nə̆H*** (PS) ‘ear’ > Old Chinese 耳 **ńi̯əg* (K) = **nhəʔ* (S) (> Beijing *ə̂*^{2}, Meixian *ńi*^{2}, Guangzhou *ji*^{22}, Shanghai ɦ□ʳ ^{32}, etc.); Tibetan r-*na*, Kham or-*na*, Abor-Miri *nyo*-rung, Lepcha (a-)*nyor*, Bhramu kə-*na*, Sunwar ˊ*no*-phā, Tulung *no*-kphla, *no*-phla, *nə*-phla, Kaling *ŋe*-co, Dumi *ŋi*-co, Limbu *ne*-phāk, Kulung *nɔ*-bɔ, Yamphu *nä*-ʔäk, Chang *nou*, Garo *na*-tśil, Moshang *na*, Burmese *nah*, Maru *nò*, Lahu *nā*-pɔ, Mpi *m*^{2}-pha^{2}, Kachin (Jingpho) *na*^{1}, Rawang ə-*na*, Trung a^{3}-*na*^{2}, Mikir *nò*, etc. // Proto-Yeniseian (PY) ****ʔɔ**-gde* / ****ʔɔ**-qtV* ‘ear’ > Ket *ɔgde*^{5}, Yug *ɔxtɨŋ*^{6}, Arin *utḱenoŋ, utq́ōnoŋ*, Pumpokol *atkin* ‘ear’. Historically the PY form is a compound **ʔɔ(N)+gde* / **ʔɔ(N)+dge*, analogous to Proto-Andian **ħan+k̓it̓a* / **ħan+t̄ik̓a* ‘ear’ (see above).

D. **‘blood’:** Basque ****huin*** ‘marrow, brain, pith’ > Lapurdian *huiñ, fuiñ* ‘marrow, pith’, Low Navarrese *hun* ‘marrow, pith, brain’, Zuberoan *hün* ‘marrow’, bür-*hün* ‘brain’, Bizkaian *un* ‘marrow, pith’, gar-*un* ‘brain’, etc. // PEC ****hwĕʔnV*** ‘blood’ > Avar *han* ‘meat’; Andi *hin* ‘blood’, Akhwakh *hini*, dial. *hĩ* ‘blood’; Tsez *e*, Hinukh *ijo*, Bezhta *hẽ*, Hunzib *hãj* ‘blood’; Lak *u̧*; Dargwa *ħi* (Tsudakhar, Kharbuk *ħe*); Lezgi *i*-(wi), Tabasaran *i*-(fi), Agul *iʔ,* Rutul *a*-bir, Tsakhur *e*-b ‘blood’ // PST **s-**hywəy*** (BM) = **s-**ʔʷīj*** (PS) ‘blood’ > Old

---

[30] Cf. the convergent phonetic development in Cauc: Batsbi *pħu* ‘dog’.

[31] Some more doubtful additions: Proto-Yeniseian ****ʔɨʔɨ-n*** (~ *x*-, -ɢ-, -*χ*-) ‘puppy’ > Ket *īn-tip* / *ɨ:n-tip*^{3}, Yug *ɨ:n-čip*^{3}, plural *ɨ:-čap*^{3}. (A compound with PY **čip* ‘dog’) // Burushaski ****huk*** ‘dog’, if it can be analyzed as **hu-k* (with an old diminutive suffix).

[32] With pharyngealized glottal stop [ʔ̨]; cf. the notes to Tsez *ʁ̨ʷaj* ‘dog’, etc., above.

Chinese 血 **χiwet* (K) = **s-whī-t* (S) ‘blood’ (>Beijing *śie*^{2}, Guangzhou *hyt*^{43}, Shanghai *śyîʔ*^{4}, etc.); Lepcha *vi*, a-*vi*, Adi *iyi*, Kanauri *śui,* Bunan *śu,* Chepang *wi* ~ *wei*, Vayu *vi*, Magar *hyu* [hü], Bahing *hu*-si, Kaling, Kulung *hi*, Dumi *hī*, Garo an-*tśi*, Dimasa *thi*, Burmese s-*wijh* = *swê*, Lahu (ɔ̀-)*šɨ̄*, Maru *sa*, Kachin (Jingpho) *sai*^{2} = *sài*, Lushai *thi*, Mikir *vi*, Meithei *i*, Mao Naga o-*zhi* ‘blood’; Tibetan *ji* (*yi*) ‘spirit’, etc. // ? Na-Dene: Proto-Athabascan **ci̓·-**ɣ̣a·ŋ́*** ‘brain’ > Navajo *’atsiighą́ą’* /ʔa-ci·ɣã·ʔ/ ‘(someone’s) brain’, Ahtna *-ciɣa·n,* Carrier *-cinɣay*, etc.: a compound of **ci·ʔ-* ‘head’ + **ɣ̣a·ŋ́* ‘pith’ (?) (Krauss & Leer 1981: 37, 117); Cf. Zuberoan Basque *bür-hün* ‘head-pith, *i.e.* brain’, above.

E. **‘four’:** Basque ****lau*** ‘four’ > *lau* in all dialects, with suffix *lau-r* in northeastern dialects. // Proto-West Caucasian (PWC) ****p(:)əX̣ə*** (NS)[33] = ****pX̓ə́*** (Ç)[34] ‘four’ > Adyge, Kabardian *p̓λ̓ə*, Ubykh *p̓X̓ə,* Abkhaz, Abaza *pš́ə*-ba. This root seems to be cognate with East Caucasian ‘eight’ (4x2): PEC ****bŭ̄nḺe*** (~ **bŭ̄nḺa*) ‘eight’ > Chechen, Ingush *barh*, Batsbi *barλ;* Avar *míƛ̓:*-go, Andi *bejƛ̓:i*-gu, Akhwakh *biƛ̓:i*-da-be, Chamalal *beƛ̓:i*-da, Tindi, Karata, Botlikh, Godoberi *biƛ̓:i*-da, Bagwali *biƛ̓:i*-ra; Tsez *biƛ*-no, Hinukh *beƛ*-no, Khwarshi *baƛa*, Bezhta *beƛ*-na, Hunzib *beƛ*-no; Lak *ma̡j*-; Dargwa *geħe*-l; Lezgi *mužu*-d, Tabasaran *mirži*-b, Agul *muja*-d, Rutul *mɨje*-d, Tsakhur *moli*-llä, Kryz *miɣi*-d, Budukh *mɨjə*-d, Archi *meƛe*, Udi *muʁ*; Khinalug *ink̓* ‘eight’ // Burushaski ****w-alt-*** ‘four’[35] > Yasin *waltu, walte*, Hunza, Nagar *walto, walti*. Cf. Bur. **alto* ‘two’, without the labial prefix, and **altamb-* ‘8’ (Bengtson & Blažek 2011: 40, 53-54). // PST ****b-ləy*** (BM) = ****P-lĭj*** (PS) ‘four’ > Old Chinese 四 **si̯̭əd* (K) = **slhij-s* (S) (> Beijing *si_*^{3}, Xiamen *su*^{31} (lit.), *si*^{31}, Guangzhou *ši*^{31}, Shanghai *si_*^{3}, etc.); Tibetan *b-źi*; Digaro *kəprei*, Magar *buli*, Chepang *ploi*, Vayu *bli*, Thulung *bli* ~ *blə,* Kaling *’bhäl*, Dumi *balɨkpi*; Garo *bri*, Dimasa *biri*; Mikir *phli*, Lushai *pali*, Meithei *mari*, Angami *da, die,* Chokri *da,* Kezhama *pedi,* Liangmai *madai,* Mao *padei,* Mzieme *m(a)dai,* Nruanghmei *padei*, Sema *bidhi*, Tangkhul *mati,* Zeme *medai;* Burmese *lijh* = *lê*, Maru *byìt*, Lahu *ɔ^*, Akha *ø`*; Kachin (Jingpho) *məlī* = *məli*^{1}; Nung *əbyi*, Trung *bli*^{2}, Pwo Karen *li*, Sgaw Karen *lwi,* etc.

F. **‘ten’:** PEC ****ʔĕnçĔ*** > Chechen, Ingush *itt*, Batsbi *itt̓;* Avar *anc̓*-, Andi *hoc̓o*-, Akhwakh *ač̣a*-, Chamalal *ac̓a*-, Tindi, Karata *hac̓a*-; Tsez *oc̓i*-no, Hinukh *oc̓e*-no, Khwarshi *ũc̓i*-n, Bezhta *ac̓o*-na, Hunzib *ɔc̓c̓ɔ*-n; Lak *ac̓;* Dargwa

---

[33] NS indicates the Proto-West Caucasian model of reconstruction favored by Nikolayev & Starostin (see NCED).

[34] Ç indicates the Proto-West Caucasian model of reconstruction favored by Sadz Çirig (see Chirikba 1996).

[35] Burushaski *-lt-* (< **-tl-*) is the regular correspondence to Caucasian lateral affricates (Bengtson & Blažek 2011: 36-41).

weč̓-; Lezgi *č̓u-*, Tabasaran *jič̓u-*, Agul *ič̓u-*, Rutul, Tsakhur, Kryz, Budukh *jič̓ɨ-*, Archi *w-ič̓*, Udi *w-ic:;* Khinalug *jaʕiz;* PWC **b-ĉʷə* > Abkhaz *žva*-ba, Abaz. *žʷa*-ba, Adyge, Kabardian *p̓ṣ̌ə*, Ubykh *žʷə* 'ten' // PST ****ts(y)i(y)** ~ ***tsyăy*** (BM) = ****[ʒ́h]Vj*** (PS) > Tibetan b-*ću* (in comp. b-*ćo*), Dakpa *chi*, Lepcha kă-*ti*, Garo *ći* = *tśi*, Dimasa *dźi*, Moshang rok-*śi*, Namsang i-*tśi,* Kachin (Jingpho) *ši*^{1} = *(t)śī*, Burmese *ćhaj* = *chai*, Bola *thai*^{55}, Lahu *chi*, Karen *shi,* etc. // PY ****tuʔ**-ŋ* '10' (in words for '20, 30, 40', etc.) > Kott *-thukŋ*, Arin *-thūŋ, -tuŋ* (alternative origin suggested by Blažek 2010).

* * * * * * *

Appendix B: Some interesting phonetic convergences[36]

'salt':	(Cauc) Chechen	*tuχa*	:	(ST) Bola	*tha*
	(Cauc) Tindi	*c:ā̃*	:	(ST) Kanauri	*cha*, Burmese *ćhah*
'dog':	(Bsq) Low Nav.	*hor*	:	(Cauc) Budukh	*χor*
	(Cauc) Batsbi	*pħu*	:	(ST) Lahu	*phɨ*^
	(Cauc) Rutul	*χij (χiy)*	:	(ST) Tibetan	*khji (khyi)*
	(Cauc) Abkhaz	*a-lá*, Abaza *la*	:	(ST) Bahing	*khli*-tśa, Kaling *khle*-p
	(Cauc) Dargwa	*χ̨.a*	:	(ND) Haida	*χa, χā*
'ear':	(Cauc) Chamalal	*anna*	:	(ST) Rawang	ə-*na,* Moshang *na*
	(Cauc) Tindi	*han*-k̄̓it̓a	:	(Yen) Ket	ɔ-gde^{5}
	(Cauc) Karata	*han*-t̄ik̓a	:	(Yen) Pumpokol	*a*-tkin
'blood':	(Bsq) Low Nav.	*hun* 'marrow', etc.	:	(Cauc) Avar	*han* 'meat', Andi *hin* 'blood'
	(Cauc) Dargwa	*ħi,* Agul *iʔ*	:	(ST) Kaling	*hi*, Dumi *hī* 'blood'
'four':	(Bsq)	*lau, lau*-r	:	(ST) Burmese	*lijh* = *lê*, Sgaw Karen *lwi*
	(Cauc) Ad., Kab.	*p̓χ̓ə*	:	(ST) Mikir	*phli*, Lushai *pali*
	(Cauc) Abkhaz	*pš́ə*-ba	:	(ST) Tibetan	*bźi*
'ten':	(Cauc) Ad., Kab.	*p̓š̓ə*	:	(ST) Tibetan	*bću*
	(Cauc) Tsez	*oč̓i*-no	:	(ST) Namsang	i-*tśi*

---

[36] Unless noted otherwise, meanings are the same as the canonic gloss in left column. See **Appendix A** for full particulars.

MOTHER TONGUE
Journal of the Association for the Study of Language in Prehistory • Issue XVI • 2011

The myth of rapid linguistic change IV: The evidence from Afroasiatic

Jonathan Sherman Morris
São Paulo, Brazil

ABSTRACT

This paper analyses a Coptic/Egyptian Swadesh list but also takes the novel step of exploring the Afroasiatic cognates of entries, showing, in particular, the extensive existence of Chadic cognates. A discussion of the process of desertification of the Sahara leads the author to conclude that Egyptian and Chadic languages have been spatially isolated from each other at least since 3500 BCE and probably for several millennia longer. Furthermore, the relative absence of such cognates in Cushitic languages or Berber argues against extensive borrowing due to trade during the Dynastic period. The implications of these findings are that the only extensive innovation between Old Egyptian and Coptic is loss of vocabulary and that words which are not documented for the first time until the Middle Kingdom or later must have been present during the earliest stages of Egyptian. A superficial reading of the time depth of such data will give rates of lexical replacement which agree with the conventional ones used in glottochronology of 20% or so per millennium, but this study shows how such figures are grossly distorted due to a failure to appreciate the implications of comparative (and specifically Chadic) data and that the true rates of change are much lower.

INTRODUCTION

The fourth part of this serial essay[1] attempts to extend the conclusions reached for Latin and Greek in the first three sections to a non-Indo-European language family. In particular, it was shown that a) the main phonological changes tended to take place at a relatively early stage or were not really phonological changes at all but merely the adoption of dialectal variants as a standard language, b) the main changes on a Swadesh list were overwhelmingly due to internal borrowing rather than to massive phonological change or external borrowing and that there were very few 'new' words which had not been extensively documented in the classical language, albeit with a slightly different meaning. These findings evidently begged the question as to whether these changes were specific to Latin and Greek or whether they were universally valid, and it seemed to this author that the only way to resolve this issue was to repeat the exercise for other language families.

There are nevertheless very few language groups for which this is possible, due to the need, not only for large volumes of linguistic/dialectal data covering at least 3 millennia and most importantly, which provides material for dating linguistic changes, but also for high quality comparative etymological dictionaries/databases. Indeed, Semitic, which would seem to be a natural candidate, falls down on the latter count and will continue to do so until Militarev or another scholar produces a comprehensive comparative etymological dictionary rivalling the ambition of the classic Indo-European ones.

---

[1] Previously in *Mother Tongue*: "The myth of rapid linguistic change (debunked by the Romance languages)." MT XIII: 41-61 (2008); "The myth of rapid linguistic change: Part II." MT XIV: 51-72 (2009); "The myth of rapid linguistic change III: The evidence from Greek." MT XV: 79-100 (2010).

This analysis is nevertheless possible for Coptic/Egyptian, using Crum's[2] large and comprehensive Coptic dictionary, the Coptic etymological dictionaries by Vycichl[3] and Černy[4], the classic Egyptian dictionary by Erman and Grapow[5], the incipient Egyptian etymological dictionary by Takacs[6], more general works on Afroasiatic by Orel / Stolbova[7] and Dolgopolsky[8], and most notably Militarev / Stolbova / Orel's contributions to Starostin's database on his Tower of Babel site[9], which provide the foundations for such an analysis.

This paper thus repeats the approach of the previous sections, by taking a Swadesh list for Coptic and researching every entry. The list presented in this study is thus comprehensive for Coptic but not for Egyptian, since this would have expanded the scope of the work without necessarily adding much to the conclusion. If, for example, we consider the entry for 'sun', we have *'itn, r', šw, wn* as basic Egyptian entries, the first and last of which survive into Coptic as ⲣⲏ [rē] and ⲟⲩⲟⲉⲓⲛ [uein], but if we were to embark on a full analysis of Egyptian, we would have to also look at designations for the sun, references for the sun as beetle, with uraeus (stylized Egyptian cobra, a symbol of divine authority), together with the moon, references to Sun gods, etc., which may appear to be embedded in a literary/mythological context in Egyptian, but are the conventional words for 'sun', e.g. *bsy*, which appears as Sun god during the Middle Kingdom, but which is cognate with Central Chadic words for 'day'.

THE TRANSITION FROM ANCIENT EGYPTIAN TO COPTIC: LESS INNOVATION THAN MEETS THE EYE

Written records of Egyptian are more or less continuous over three millennia from the Early Dynastic Period at the start of the 3rd millennium BCE until Roman times. While the language was highly standardised for administrative/religious purposes, this standard shifted over time, not least, no doubt, because the location of the capital changed. Egyptian ultimately evolved into the Coptic dialects, which began to be transcribed in Greek letters in the 1st century CE. While the Sahidic dialect of Upper Egypt was dominant in pre-Islamic times, from the 9th century CE onwards, it lost ground to the Bohairic dialect of the Nile delta, which is now the main language for the liturgy of the Coptic church and the only variety still spoken, albeit by only some 300 Copts, most of whom live outside in Canada and Australia. Other dialects were also documented in the pre- and early Islamic era, notably Akhmimic, spoken in the Akhmim region around 450 km South of Cairo, Fayumic, spoken around the Fayum depression and Lycopolitan, spoken around Lycopolis (now Assyut), 360 km South of Cairo. Several other dialects are attested but do not appear on the present Swadesh list.

The following table presents data on the lexical items on Militarev's 100-item Swadesh list[10] and follows his numbering. It nevertheless goes well beyond a conventional Swadesh list by attempting to date the first appearance of each entry in

---

[2] Crum, W. E., *A Coptic Dictionary*, Oxford: Clarendon Press, 1939.

[3] Vycichl, W., *Dictionnaire étymologique de la langue copte*, Peeters, 1983.

[4] Černy, J., *Coptic Etymological Dictionary*, Cambridge 1976.

[5] Erman A., Grapow H., *Wörterbuch der aegyptischen Sprache* Bd. I–V (1926–1931), VI (1950), VII (1971).

[6] Takacs, G., *Etymological Dictionary of Egyptian*, Leiden, 1999-.

[7] V.E Orel & O.V. Stolbova, *Hamito-Semitic Etymological Dictionary: Materials for a Reconstruction*. Leiden, 1995.

[8] Dolgopolsky, A., *Nostratic Dictionary*, Cambridge 2008.

[9] http://starling.rinet.ru/cgi-bin/main.cgi?flags=eygtnnl

[10] Militarev, A., "Towards a Chronology of Afrasian (Afroasiatic) and its Daughter Families," in C. Renfrew, A. McMahon and L. Trask, eds. *Time Depth in Historical Linguistics*, pp. 267–310.

Egyptian, with data for the Ancient Egyptian Pyramid texts (26th century BCE) and for the Coptic dialects. Where an Ancient Egyptian form is given, the implication is that it occurs in the Pyramid texts, representing the oldest Egyptian texts unless otherwise stated. For reasons of space, the full list with details of all of the Afroasiatic cognates is shown in the appendix.

Entries under **'First presence in Egyptian'** are as follows:

Old Kingdom:	2686-2181 BCE, coincides with 'Old Egyptian'
Pyramid texts:	written during the Old Kingdom, from 2400-2181 BCE
Middle Kingdom:	2055-1650 BCE, coincides with speaking of **'Middle Egyptian'**
New Kingdom:	1550-1069 BCE, coincides with 'New Egyptian'
- **18th dynasty**:	1550-1292 BCE, which includes the **Amarna** period (1353-1292 BCE),
- **19th dynasty**:	1292-1187 BCE,
- **20th dynasty**:	1187-1069 BCE
Third intermediate period:	1069-664 BCE
- **22nd dynasty**:	943-716 BCE
Late period:	664-332 BCE
- Demotic	spoken 700-100 BCE, but most texts date to 685-525BCE
Ptolemaic period:	332-30 BCE
Coptic period:	300 BCE-1500 CE

The table also refers to the **Sarcophagus texts**, which date from 2200-1500 BCE, **Medical** texts, most of which were written during the Middle and New Kingdom (2000-1200 BCE), **Mathematical** texts, most of which were written during the Middle Kingdom (2100-1700 BCE) and the **Book of the Dead** (written after 1550 BCE). Given the existence of oral traditions, dates for words are unlikely to represent their earliest occurrences.

Coptic forms are given as stated in Vycichl/Crum, with letters in brackets indicating the relevant dialect, hence: (A): Akhmimic, (B): Bohairic, (F): Fayumic, (L): Lycopolitan, (O): Old Coptic (representing a variety of dialects), (P): Proverbs, (S): Sahidic, Phonetic transcriptions of Coptic words follow Dolgopolsky's key (p. 2722 of his Nostratic Dictionary).

Entries in the **'Present in Coptic'** column mainly consist of a simple YES or NO, although some abbreviations are present. (SC) – semantic change, refers to cases of meaning shift from Egyptian to Coptic. (CPD) – compound, refers to cases where the Coptic word is a compound of older words, attested individually in Egyptian. Hence ⲙⲉⲥⲧϩⲏⲧ (SB) means 'basket' + 'heart'. The individual lexical items are evidently attested at an earlier date, but not as a compound until Coptic.

The final column 'Afroasiatic cognates' states whether cognates for Egyptian/Coptic words are present in other Afroasiatic languages, notably Berber, Semitic and Chadic. These comparisons are drawn predominantly from Militarev's entries in Starostin's 'Tower of Babel' database, but also from 'Dolgopolsky's Nostratic dictionary (D+number), Orel/Stolbova (OS+number) or Gabor Takacs' Egyptian etymological dictionary (T+number) and are presented in detail in the appendix. The term 'YES' indicates that these authors are satisfied that cognates exist. In addition, I have researched my own etymologies in their works which appear particularly plausible and labelled these as POSSIBLE. The term BORROWING indicates that the Egyptian form is itself a borrowing from another Afroasiatic language (mainly Semitic). The term NO means that this author was unable to find any cognates, but since I claim no expertise in these languages, I am open to correction.

TABLE 1. SUMMARY OF EXPANDED SWADESH LIST

No.	**English**	**Ancient Egyptian**	**Coptic**	**First presence in Egyptian**	**Present in Coptic**	**Afroasiatic cognates**
1	ALL	*nbw*	ⲛⲓⲙ [nim] (SALFO), ⲛⲓⲃⲉⲛ [niben] (B), ⲛⲓϥⲉⲛ [nifen], ⲛⲓⲃⲓ [nibi] (F)	Pyramid	YES	YES
2	ASHES	*zz*		Pyramid	YES (SC)	NO
		ḳrmt	ⲕⲣⲙⲉ [krme] (S), ⲕⲉⲣⲙⲓ [kermi] (B), ⲕⲩⲣⲙⲓ [kwrmi] (F), ⲕⲣⲙⲉⲥ [krmes] (SA)	19th Dyn.	YES	YES - BORROWING?
			ⲉⲧⲛⲓϧ [etniχ] (A)	18th Dyn.	YES (CPD)	YES
		t3w		Pyramid	NO	YES
3	BARK	*ḳḳ*	ⲕⲟⲩⲕⲉ [kuke] (S), ⲕⲟⲩⲕⲓ [kuki] (B)	Ptolemaic	YES	YES
4	BELLY	*ẖt*	ϩⲏ [hē] (S), ϧⲓ [χi] (A)	Pyramid	YES	YES
		ng3yy	ⲛⲏϭⲉ [nēǯe] (S), ⲛⲉϫⲓ [nēǯi] (B)	New Kingdom	YES	YES
			ⲙⲉⲥⲧϩⲏⲧ [mesthēt] (SB), ⲙⲉⲥⲧⲛϩⲏⲧ [mestnhēt] (SB)	Coptic	YES (CPD)	YES
5	BIG	*'3*	ⲟ [o] (S), ⲱ [ō] (B), ⲁ [a] (F)	Pyramid	YES	YES
			ⲛⲓϣϯ [ništi] (B), ⲛⲟϭ [noc] (S)	(Pyramid)?	YES	YES
		wr	ⲟⲩⲛⲣ [unr] (SB), ⲟⲩⲛⲗ [unl] (F)	Mathematical	YES	YES
6	BIRD	*3pd*	ⲱⲃⲧ [ōbt] (S)	Pyramid	YES (SC)	YES
			ϩⲁⲗⲏⲧ [halēt] (SB), ϩⲁⲗⲉⲧⲉ [halete] (A)	Late	YES	YES
7	BITE	*psḥ*	ⲡⲱϩⲥ [pōhs] (S)	Pyramid	YES	YES
			ⲗⲱⲕⲥ [lōks] (S),	New Kingdom	YES	POSSIBLE

			ⲗⲕϭⲥ [lkcs], ⲗⲱϧ [lōx] (S), ⲗⲟⲩϧ [lux] (SB), ⲗⲟϧ [lox] (B)			
			ⲗⲁⲡⲥⲓ [lapsi] (B)	Pyramid	YES	YES
			ⲙⲉϩⲣⲱ [mehrō] (S)	Coptic	YES (CPD)	YES
			ⲟⲩⲱⲙ [uōm] (SB), ⲟⲩⲉⲙ [uem] (SB)	Pyramid	YES (SC)	YES
			ϫⲱⲱⲕⲉ [hōōke], ϫⲟⲩⲟⲩⲕⲉ [ǯuuke] (S)	Coptic	YES	NO
8	BLACK	*km*	ⲕⲁⲙⲉ [kame] (SA), ⲭⲁⲙⲉ [ǯame] (B), ⲕⲉⲙⲓ [kemi], ⲕⲉⲙ [kem] (F)	Pyramid	YES	YES
9	BLOOD	*znf*	ⲥⲛⲟϥ [snof] (SB), ⲥⲛⲱⲱϥ [snuuf] (S), ⲥⲛⲱϥ [snōf] (B)	Pyramid	YES	YES
10	BONE	*ḳs*	ⲕⲁⲥ [kas] (SB), ⲕⲉⲥ [kes] (L)	Pyramid	YES	YES
11	BREAST	*mnḏ*	ⲙⲛⲟⲧ [mnot] (B)	Pyramid	YES	YES
			ⲉⲕⲓⲃⲉ [ekibe], ⲕⲓⲃⲉ [kibe] (S), ⲕⲓϥⲓ [kifi] (B), ⲕⲓⲃⲓ [kibi] (F)	Middle Egyptian	YES	NO
			ⲕⲁⲗⲁϩⲏ [kalahē] (SFL)	Coptic	YES (CPD)	NO
12	BURN (tr.)	*nbj*	ⲗⲱⲃϣ [lōbš] (SL), ⲗⲟⲃϣ [lobš] (B)?	Sarcophagus texts	YES	YES
		nśr		Pyramid	NO	NO
		ḳrr	ϭⲗⲓⲗ [clil] (B), ⲕⲣⲱⲙ [krōm] (S)	Pyramid	YES	YES
			ⲙⲟⲩϩ [muh] (SB), ⲙⲟϩ [moh] (B)	Middle Egyptian	YES	POSSIBLE
		rkḥ	ⲣⲱⲕϩ [rōkh] (SB), ⲣⲉⲕϩ [rekh] (SB), ⲣⲟⲕϩ [rokh] (SB)	Pyramid	YES	NO
			ⲥⲱϣⲙ [sōšm] (S)	Medical texts	YES	YES
		3šr	ⲱⲣϣ [ōrš] (S)	Pyramid	YES	YES
		tk3	ⲧⲓⲕ [tik], ⲧⲱϭ [tōc] (S), ⲑⲱⲕ [tʰōk], ⲑⲟϫⲓ [tʰoǯi] (B)	Pyramid	YES	YES
			ϫⲉⲣⲟ [ʒero] (S), ϭⲉⲣⲟ [cero] (B), ϫⲉⲣⲉ [ʒere]	Demotic	YES	YES

			(S), ϫⲉⲣⲟ [ʒero] (S)			
			ϫⲟⲩϥ [ʒuf] (SB), ϫⲱϥ [ʒōf] (SB), ϫⲟϥ [ʒof] (B)	New Kingdom	YES	YES
13	CLAW, NAIL	*‘nt*		Pyramid	YES	YES
			ⲉⲓⲉⲓⲃ [eieib], ⲉⲓⲃ [eib] (S), ⲓⲉⲃ [ieb], ⲓⲏⲃ [iēb] (B)	New Kingdom	YES	YES
14	CLOUD	*‘igp*	ϭⲓⲡⲉ [cipe] (S), ϭⲏⲡⲓ [cēpi] (B)	Pyramid	YES	YES
		ḳrr	ⲕⲗⲟⲟⲗⲉ [kloole] (S)	Pyramid	YES	YES
15	COLD	*ḳbb*	ⲕⲃⲁ [kba], ⲕⲃⲟ [kbo] (S), ⲭⲃⲟⲃ [k^{h}bob] (B)	Pyramid	YES	YES
			ⲱⲣϣ [ōrš] (S), ⲁⲣⲟϣ [aroš] (S), ϩⲣⲟϣ [hroš] (B)	Demotic	YES	NO
			ϩⲱϫ [hōʒ] (B)	Middle Kingdom/ Demotic	YES	YES
16	COME	*ii, yy*	ⲉⲓ [ei] (S), ⲓⲓ [ii] (B) ⲛⲏⲩ [nēw] (S), ⲛⲏⲟⲩ [nēw] (B)	Pyramid	YES	YES
17	DIE	*mwt*	ⲙⲟⲩ [mu] (SBALF)	Pyramid	YES	YES
			ⲡⲱⲗϫ [pōlƷ]	Coptic	YES (SC)	POSSIBLE
18	DOG	*‘i3w*		Pyramid	NO	YES
			ⲟⲩϩⲟⲣ [uhor] (S, B), ⲟⲩϩⲱⲣⲉ [uhore] (S)	Late	YES	YES (BORROWING)
			ϭⲁⲗⲟⲡⲟⲩ [calopu], ⲕⲁⲗⲟⲡⲟⲩ [kalopu] (S), ϭⲁⲗⲁⲡ [calap] (F)	Coptic	YES	YES (BORROWING)
19	DRINK	*zwr*	ⲥⲱ [sō] (SB), ⲥⲉ- [se-] (SB), ⲥⲟⲟ- [soo-] (S), ⲥⲟ- [so-] (B)	Pyramid	YES	YES
		snk	ⲥⲱⲛⲕ [sōnk] (SB), *also* ⲥⲱⲙⲕ [sōmk], ⲥⲱⲙⲅ [sōmg] (S)	Pyramid	YES	YES
20	DRY	*śšw*	ϣⲟⲟⲩⲉ [šoue] (S), ϣⲁ(ⲟ)ⲩⲉ [ša(o)ue] (S), ϣⲁⲩⲉⲓⲉ [šaueie] (A), ϣⲱⲟⲩⲓ [šwui] (B),	Pyramid	YES	YES

			ϣⲁⲩⲉⲓ [šauei] (F), ϣⲟⲩⲱⲟⲩ [šuōu] (SAAB)			
21	EAR	*ʿidn*		Pyramid	NO	YES
		msḏr	ⲙⲁⲁϫⲉ [maaʒe] (S), ⲙⲁϣϫ [mašʒ] (B), ⲙⲉϫ [meʒ] (F), ⲙⲁϣⲧⲁ [mašta] (P), ⲙⲉϣⲧ [mešt] (S)	Pyramid	YES	YES
22	EARTH	*t3*	ⲧⲟ [to] (S), ⲑⲟ [t^{h}o] (B)	Pyramid	YES	YES
		ḳḥ	ⲕⲁϩ [kah] (SAL), ⲕⲁϩⲓ [kahi] (B), ⲕⲉϩⲓ [kehi] (F)	Middle Kingdom	YES	YES
		ʿitn	ⲉⲓⲧⲛ [eitn] (S), ⲓⲧⲉⲛ [iten] (B)	18th Dyn.	YES	YES
23	EAT	*wnm*	ⲟⲩⲱⲙ [wōm] (S), ⲟⲩⲉⲙ- [wem-] (S), ⲟⲩⲟⲙ [wom] (S)	Pyramid	YES	YES
			ⲙⲉϩ-ⲣⲱ [meh-rō] (S), ⲙⲁϩ-ⲣⲱ [mah-rō] (B); ⲙⲉϩ-ϩⲏⲧ [meh-hēt] (S), ⲙⲁϩ-ϧⲏⲧ [mah-χēt] (B)	Coptic	YES (CPD)	NO
24	EGG	*swḥ.t*	ⲥⲟⲟⲩϩⲉ [souhe] (S), ⲥⲱⲟⲩϩⲓ [sōuhi] (B)	Pyramid	YES	YES
25	EYE	*ʿirt*	ⲉⲓⲁ [eia] (S)	Pyramid	YES (SC)	YES
			ⲃⲁⲗ [bal] (SB), ⲃⲉⲗ [bel] (ALFO)	Ptolemaic	YES	YES
		ʿn, ʿjn		Pyramid	NO	YES
26	FAT (noun)		ⲕⲛⲛⲉ [knne] (S), ⲕⲉⲛⲓ [keni] (B)	Old Egyptian	YES	YES
		ʿḏ	ⲱⲧ [ōt] (SB)	Old Egyptian	YES	POSSIBLE
27	FEATHER	*šw-t*		Pyramid	NO	YES
			ⲙⲏϩⲉ [mēhe] (S), ⲙⲉϩⲓ [mehi] (B)	18th Dyn.	YES	NO
28	FIRE		ⲕⲱϩⲧ [kōht] (SALF)	Medical Texts	YES	YES
			ⲕⲣⲱⲙ [krōm] (S), ⲭⲣⲱⲙ [k^{h}rōm] (B), ⲭⲗⲱⲙ [k^{h}lōm] (F)	19th Dyn.	YES	YES
		sḏ.t	ⲥⲁⲧⲉ [sate] (SA), ⲥⲁⲁ [saa] (S), ⲥⲟ [so] (S), ⲥⲉⲉ [see] (A), ⲥⲁϯ [sat] (B, F)	Pyramid	YES	NO

		3ḫt		Pyramid	NO	YES
		d̲r		Pyramid	NO	YES
		hwt		Sarcoph. texts	NO	YES
29	FISH	*rmw*	ⲣⲁⲙⲉ [rame] (S), ⲣⲁⲁⲙⲉ [raame] (S), ⲣⲁⲙⲓ [rami] (B)	Pyramid	YES	YES
			ⲧⲃⲧ [tbt] (S), ⲧⲉⲃⲧ [tebt] (B)	Ptolemaic	YES	YES
30	FLY (verb)	*pзy, pзw*		Pyramid	NO	YES
			ϩⲱⲗ [hōl] (SABF)	Pyramid	YES (SC)	YES
31	FOOT		ⲡⲁⲧ [pat] (S), ⲫⲁⲧ [p^{h}et] (B)	18th Dyn.	YES	YES
		rd	ⲣⲁⲧ [rat] (S), ⲣⲏⲧ [rēt] (S), ⲣⲉⲧ [ret], ⲣⲉⲉⲧ [reet] (S)	Pyramid	YES	YES
			ⲟⲩⲉⲣⲏⲧⲉ [wernte] (S), ⲟⲩⲣⲓⲧⲉ [urite] (L), ⲟⲩⲣⲏⲧⲉ [urēte] (SAL), ⲟⲩⲣⲏϯ [urnt] (F)	Middle Egyptian	YES (SC)	YES
			ϭⲁⲗⲟϫ [caloʒ] (B), ϭⲁⲗⲁϫ [calaʒ] (F)	Book of the Dead	YES	YES
32	FULL	*mḥ*	ⲙⲉϩ [meh], ⲁϩ [mah] (SB)	Old Egyptian	YES	YES
33	GIVE	*rdy, rdd*	ϯ [ti] (SB), ⲧⲁⲁ [taa] (S), ⲧⲏⲓ [tēi] (B)	Pyramid	YES	POSSIBLE
		(3wt)	ⲁⲩ [aw], ⲁⲩⲉ [awe], ⲁⲩⲉⲓ [awei] (S), ⲁⲩⲓ-ⲥ [awi-s] (B)	Old Egyptian	YES	POSSIBLE
34	GOOD	*nfr*	ⲛⲟⲩϥⲉ [nufe] (S), ⲛⲟⲩϥⲓ [nufi] (B)	Pyramid	YES	YES
			ⲛⲁⲛⲟⲩ [nanu] SAF), ⲛⲁⲛⲉ [nane] (B)	Middle Kingdom	YES	POSSIBLE
35	GREEN	*w3d̲*	ⲟⲩⲱⲧ [wōt] (SB)	Pyramid	YES	POSSIBLE
36	HAIR	*šny-w*		Pyramid	NO	YES
			ϥⲱ [fō], ⲃⲱ [bō], ⲟⲩⲱ [wō] (S), ϥⲱⲉ [fōe] (S), ϥⲟⲩⲉ [fue] (S), ⲃⲱⲉ [bōe], ⲃⲟ [bo] (S), ϥⲱⲓ [fōi] (S), ϥⲱⲉⲥ [fōes] (S)	New Kingdom	YES	POSSIBLE
		śr	ⲥⲓⲣ [sir] (S)	Middle Kingdom	YES	YES
			ϫⲟⲕ [ʒok] (SA), ϫⲁⲕ [ʒak] (S)	Presumably Late	YES	YES (BORROWING)

37	HAND	*ḏr*	ⲧⲱⲣⲉ [tōre] (SAL), ⲧⲱⲣⲓ [tōri] (B), ⲧⲱⲗⲓ [tōli] (F)	Pyramid	YES	YES
			ϭⲓϫ [ciʒ] (S), ϫⲓϫ [ʒiʒ] (B), ⲕⲓϫ [kiʒ] (P), ϭⲓϭ [cic] (S), ϫⲓϫϩ [ʒiʒh] (F)	New Kingdom	YES	YES
38	HEAD	*tp*	ⲁⲡⲉ [ape] (SAL), ⲁⲫⲉ [ap^{h}e] (SAL), ⲁⲡⲏ [apē] (F)	Pyramid	YES	YES
			ⲕⲁⲣⲁ [kara] (S)	Presumably late	YES	YES (BORROWING)
		ḏ3ḏ3	ϫⲱϫ [ʒōʒ] (SB)	Pyramid	YES	YES
39	HEAR	*smt*		Pyramid	NO	YES
		sḏm	ⲥⲱⲧⲙ [sōtm] (S), ⲥⲱⲧⲉⲙ [sōtem] (B), ⲥⲁⲧⲙ [satm] (SAL), ⲥⲟⲑⲙ [sot^{h}m] (B)	Pyramid	YES	YES
40	HEART	*’ib*	ⲩⲃ [ōb] (O)	Pyramid	YES	YES
		ḥ3.t-y	ϩⲏⲧ [hēt] (SB), ϩⲧⲏ [htē] (S), ϩⲑⲏ [ht^{h}ē] (B)	Pyramid	YES	YES
		idr		Literary texts, Late period.	NO	YES
41	HORN	*db*	ⲧⲁⲡ [tap] (SB)	Pyramid	YES	YES
		‘b	ϩⲱⲃ [hōb] (AB)	Pyramid	YES	YES
42	I	*’ink*	ⲁⲛⲟⲕ [anok] (SB), ⲁⲛⲁⲕ [anak] (ALF)	Pyramid	YES	YES
43	KILL	*sm3*	ⲙⲟⲩⲟⲩⲧ [muut] (S), ⲙⲉⲩⲧ [mewt] (S), ⲙⲟⲟⲩⲧ [mout] (S), ⲙⲱⲟⲩⲧ [mōut] (B)	Pyramid	YES	YES
			ϩⲱⲧⲃ [hōtb] (S), ϧⲱⲧⲉⲃ [χōteb] (B)	Middle Egyptian	YES	YES
44	KNEE	*m3s-t*		Pyramid	NO	YES
		See note	ⲡⲁⲧ [pat] (S), ⲫⲁⲧ [p^{h}at] (B)	18th Dyn.	YES	YES
			ϭⲁⲗⲟϫ [caloʒ] (B), ϭⲁⲗⲁϫ [calaʒ] (F)	Book of the Dead	YES	POSSIBLE
45	KNOW	*rḫ*	See note	Pyramid	YES	YES
			ⲉⲓⲙⲉ [eime] (S), ⲉⲙⲓ [emi] (B), ⲙⲙⲉ [mme] (AL),	New Kingdom	YES	YES

			ⲉⲓⲙⲓ, ⲓⲙⲓ [eimi, imi] (F)			
		swn	ⲥⲟⲟⲩⲛ [sown] (S), ⲥⲱⲟⲩⲉⲛ [sōun] (B)	Late Egyptian	YES	YES
46	LEAF	*(d̠rd̠r –)*		Amarna	YES	YES
			ϭⲱⲃⲉ [cōbe] (SAL), ϭⲱⲱⲃⲉ [cōwbe] (S), ϫⲱⲃⲓ [hōbi] (B), ϭⲱⲃⲓ [cōbi] (F)	Medical texts	YES	YES
47	LIE	*sd̠r,*	ϣⲁⲓⲉⲣⲉ [šaiere] (S), ϣⲁⲓⲣⲓ [šairi] (B)	Pyramid	YES	POSSIBLE
			ⲛⲕⲟⲧⲕ [nkotk], ⲛⲕⲟⲧⲉ [nkote] (S), ⲛⲕⲁⲧⲉ [nkate] (SSA)	Middle Egyptian	YES	YES
48	LIVER	*myz-t*	ⲙⲁⲟⲩⲥⲉ [mause], ⲙⲁⲟⲩⲥⲓ [mausi] (Old)	Pyramid	YES	YES
			ⲟⲩⲫⲁϫⲓ [up^{h}aʒi] (B)	Not Clear	YES	POSSIBLE
49	LONG	*3wy*	ⲱⲟⲩ [ōu] (B)	Pyramid	YES	YES
		See note	ϣⲓⲁⲓ [šiai] (SB)	New Egyptian	YES (SC)	POSSIBLE
			ⲛⲓϣϯ[ništi] (B), ⲛⲟϭ [noc] (S)	Pyramid	YES (SC)	YES
50	LOUSE	*zby*	ⲥⲓⲃ [sib] (S), ⲥⲓⲡ [sip] (B)	Middle Egyptian	YES	YES
			ϩⲗⲱⲙ [hlōm], ϩⲗⲟⲙ [hlom] (S), ⲗⲉϩⲗⲉⲙ [lehlem], ⲗⲉϩⲗⲏⲙ [lehlēm] (B)	Late Egyptian	YES	POSSIBLE
51	MAN	*rmt̠*	ⲣⲱⲙⲉ [rōme] (S), ⲣⲱⲙⲓ [rōmi] (B), ⲗⲱⲙⲓ [lōmi] (F)	Pyramid	YES	YES
		z	ⲥⲁ [sa] (SB)	Pyramid	YES	YES
52	MANY	*ḥḥ*	ϩⲁϩ[hah] (S)	Pyramid	YES	NO
			ⲙⲏⲏϣⲉ [mēēše] (S), ⲙⲏϣ [mēš] (B)	Middle Kingdom	YES	POSSIBLE
		ʿš3	ⲛⲁϣⲉ- [naše-], ⲛⲁϣⲱ [našō] (SAABF) but also ⲁϣⲁⲓ [ašai] (SB), ⲁϣⲉⲓ [ašei] (A), ⲁϣⲛⲉⲓ [ašnei] (AF), ⲁϣⲉⲉⲓⲧⲉ [ašeeite] (SB)	Pyramid	YES	YES
			ⲉⲙⲁⲧⲉ [emate], ⲙⲙⲁⲧⲉ [mmate] (S)	Old Kingdom/ Borrowing	YES	POSSIBLE
53	MEAT	*ʾif*	ⲁϥ [af] (SB),	Pyramid	YES	YES

			ⲁⲁϥ [aaf] (SF), ⲉϥ [ef] (ALO)			
54	MOON	*iʿḥ*	ⲓⲟϩ [ioh] (B), ⲉⲱϩ [eōh], ⲓⲱϩ [ioh] (O), ⲟⲟϩ [ooh] (SAL), ⲁⲁϩ [aah] (F)	Pyramid	YES	POSSIBLE
55	MOUNTAIN	*mn(.t)*		19th/20th Dyn.	YES	NO
		ḫ3śt		Pyramid	NO	YES
		ḏw	ⲧⲟⲟⲩ [tou] (S), ⲧⲱⲟⲩ [tōw] (B), ⲧⲁⲩ [taw] (ALF)	Pyramid	YES	YES
56	MOUTH	*r3*	ⲣⲟ [ro] (SB)	Pyramid	YES	YES
		wt		Pyramid	NO	YES
			ⲡⲁⲓⲉϭⲉ [paiece] (A)	Middle Kingdom	YES	POSSIBLE
57	NAME	*rn*	ⲣⲁⲛ [ran] (SB), ⲣⲉⲛ [ren] (AL), ⲗⲉⲛ [len] (F), ⲣⲓⲛ [rin] (P)	Pyramid	YES	YES
		k3		22nd Dyn.	NO	YES
58	NECK		ⲙⲁⲏϩ [manh] (S), ⲙⲁϫ [mak^h] (S), ⲙⲟⲕϩ [mokh] (A), ⲙⲉⲏϩ [menh] (A), ⲙⲉϩϫ [mehk^h] (O)	18th Dyn.	YES	YES
		nḥb.t	ⲛⲁϩⲃ [nahb] (S), ⲛⲁϩϥ [nahf] (S), ⲛⲁϩⲃⲉ [nahbe] (B), ⲛⲁϩⲟⲩⲓ [nahui] (B), ⲛⲉϩⲃⲓ [nehbi] (F)	Pyramid	YES	YES
		ḫḫ	ϩⲁϩ [hah] (S), ϧⲁϧ [χaχ] (B)	Pyramid	YES	YES
		wśrt		Pyramid	NO	YES
59	NEW	*m3*	ⲙⲟⲩⲓ [mui], ⲙⲟⲩⲟⲩⲓ [muui] (F)	Pyramid	YES	YES
			ⲃⲣⲣⲉ [brre] (S), ⲃⲉⲣⲓ [beri] (B)	Old Kingdom?	YES	POSSIBLE
			ϣⲁⲓ [šai] (S)	Book of the Dead, New Kingdom	YES	YES
60	NIGHT	*wḫ-t*	ⲟⲩϣⲏ [ušn] (SAAF), ⲟⲩϧⲓ [uχ_2i] (A), ⲟⲩϣⲓ [uši] (F),	Pyramid	YES (SC)	YES
		grḥ	ϭⲱⲣϩ [bōrh] (SLF),	Pyramid	YES	YES

			ϭⲱⲣⲁϩ [bōrah] (S), ϫⲱⲣϩ [ʒōrh] (BO), ϫⲱⲣⲉϫ [ʒōreʒ] (B), ⲉϫⲱⲣϩ [eʒōrh] (B)			
		nn		Pyramid	NO	YES
		šśr3t		Pyramid	NO	YES
61	NOSE	*fnḏ*		Pyramid	NO	YES
		šr.t	ϣⲁ [ša] (S), ϣⲁⲓ [šai] (B), ϣⲉⲉ [šee], ϣⲉⲉⲡⲧ [šeept] (AF)	Pyramid	YES	YES
62	NOT	*n , ʾin*	ⲛ [n] (SB)	Pyramid	YES	YES
		ʾin	ⲁⲛ [an] (SB), ⲉⲛ [en] (ALF)	Pyramid	YES	YES
			ⲙⲙⲏ, ⲙⲏ [mmē, mē] (SAA), ⲙⲙⲟⲛ [mmon] (F), ⲙⲏⲧ [mēt] (SB)	New Kingdom	YES	YES
63	ONE	*wʿ*	Masc. ⲟⲩⲁ [ua] (S), ⲟⲩⲁⲓ [uai] (B), Fem. ⲟⲩⲉⲓ [uei] (S), ⲟⲩⲓ [ui] (B)	Pyramid	YES	YES
64	PERSON	*zy*	ⲥⲁ [sa] (SB)	Pyramid	YES	YES
		rmṯ	ⲣⲱⲙⲉ [rōme] (SA), ⲣⲱⲙⲓ [rōmi] (B), ⲗⲱⲙⲓ [lōmi] (F)	Pyramid	YES	YES
65	RAIN	*ḥw.t*	ϩⲱⲟⲩ [hōu] (SABF)	Pyramid	YES	POSSIBLE
			ⲙⲟⲩⲛⲱϣⲓ [munōši] (B)	Coptic	YES (CPD)	YES
66	RED	*ṯr, dšr*	ⲧⲱⲣϣ [tōrš] (SA)	Pyramid	YES	YES
		ʾinś		Pyramid	NO	YES
			ⲙⲏⲣϣ [mērš] (SB)	Medical texts	YES	NO
67	ROAD	*w3.t*	ⲟⲩⲟⲉⲓ [uoei] (S), ⲟⲩⲟⲓ [uoi] (B), ⲟⲩⲁⲉⲓ [uaei], ⲟⲩⲁⲉⲓⲉ [uaeie] (L)	Pyramid	YES	YES
		(mṯn)	ⲙⲟⲉⲓⲧ [moeit] (S), ⲙⲱⲓⲧ [mōit] (B)	Old Kingdom	YES	POSSIBLE
		ḥr.t	ϩⲓⲛ [hin] (SLF), ϩⲓⲛ [hin], ϩⲓⲁ [hia] (F)	Pyramid	YES	YES
			ϩⲟⲟⲩⲧⲛ [houtē] (S),	19th Dyn.?	YES	POSSIBLE

			ϩⲟⲩⲧⲉⲛ [huten] (F)			
68	ROOT	*w3b*		Pyramid	NO	YES
			ⲛⲟⲩⲛⲉ [nune] (SA), ⲛⲟⲩⲛⲓ [nuni] (BF)	Medical texts Certainly since the 18th Dyn.	YES (CPD)	YES
69	ROUND	*dbn*		Pyramid	NO	YES
		šny	ϣⲓⲛⲉ [šine], ϣⲛⲧ [šnt] (S), ϣⲓⲛⲓ [šini] (B), ϣⲉⲛ- [šen-] (SB)	Pyramid	YES (SC)	YES
			ⲕⲉⲗⲕⲱⲗ [kelkōl] (S)	Coptic?	YES	YES
70	SAND	*š'y*	ϣⲱ [šō] (S), ϣⲟⲩⲟⲩ [šuu] (S)	Pyramid	YES	YES
71	SAY	*ḏd*	ϫⲱ [ʒō] (SB), ϫⲟⲩ [ʒu] (A), ϫⲉ- [ʒe] (SBALF), ϫⲓ [ʒi] (SAF)	Pyramid	YES	YES
		k3		Pyramid	NO	YES
		'in		Pyramid	NO	YES
		ḫr	ϩⲣⲟⲟⲩ [hrou] (SL), ϧⲣⲱⲟⲩ [χrōu] (B), ⳉⲣⲁⲩ [$\chi_2$praw] (A), ϩⲣⲁⲩ [hraw] (F)	Pyramid	YES	YES
		'iw		New Kingdom	YES	YES
72	SEE	*m33*		Pyramid	NO	YES
		(b3ḳ)		Late Literary Egyptian	NO	YES
		dgj		Pyramid	NO	YES
			ⲛⲁⲩ [naw] (SB), ⲛⲉⲩ [new] (FL), ⲛⲟ [no] (AL)	18th Dyn.	YES	YES
		'ir	ⲉⲓⲱⲣϩ [eiōrh] (S), ⲓⲱⲣϩ [iōrh] (B)	Pyramid	YES	YES
		(ḫty)		Book of the Dead	NO	YES
		ptr	ⲫⲉⲣ [p^{h}er] (S), ⲫⲱⲣ [p^{h}ōr] (B)	Pyramid	YES	YES
73	SEED	*pry-t*	ⲉⲃⲣⲁ[ebra] (S), ⲃⲣⲁⲓ [brai] (B)	Pyramid	YES	YES
		sṯy	ⲥⲓϯ [siti] (B)	Pyramid	YES	YES
74	SIT	*ḥmsy*	ϩⲙⲟⲟⲥ [hmoos] (S), ϩⲉⲙⲥⲓ [hemsi] (B), ϩⲙⲉⲥ [hmes] (AL), ϩⲙⲁⲁⲥ [hmaas] (LF), ϩⲙⲟⲥⲧ [hmost] (SAB),	Pyramid	YES	YES

			ϩⲙⲁⲥⲧ [hmast] (ALP), ϩⲉⲙⲁⲥⲧ [hmast] (F)			
			ϩⲱⲣⲕ [hōrk], ϩⲁⲣⲕ[hark] (S)	Pyramid	YES	YES
		(ṯs)		Middle Kingdom	NO	YES
75	SKIN	*ʿinm*	ⲁⲛⲟⲙ [anom] (B)	Pyramid	YES	YES
		ḫʾr	ϣⲁⲁⲣ [šaar], ϣⲁⲣ [šar], ϣⲁⲁⲣⲉ [šaare] (S), ⳉⲁⲁⲣⲉ [$\chi_2$aare] (A), ϣⲉⲉⲗ [šeel] (F)	Pyramid	YES	YES
		ḫ3f	ϣⲁⲁⲃ [šaab], ϣⲁⲁϥ [šaaf], ϣⲟⲟⲃ [šoob] (S)	Pyramid	YES	NO
		mśk		Pyramid	NO	POSSIBLE
		ntnt, ntt		Pyramid	NO	YES
		(dḥr)		Pyramid	NO	YES
76	SLEEP	*ʿwn*		Pyramid	NO	YES
		ʿwy, ʿʿw		Middle Kingdom	NO	YES
		ḳd	ⲕⲁⲧⲉ [kate] (O), ⲕⲓⲧⲉ [kite] (S)	Middle Egyptian, 19th Dyn.	YES	YES
			ϩⲓⲛⲏⲃ [hinēb] (SAF), ϩⲓⲛⲏϥ [hinēf] (SF), ϩⲓⲛⲓⲙ [hinim] (B)	Amarna period	YES	YES
		ʿib3n		Pyramid	NO	YES
77	SMALL	*nḏś*		Pyramid	NO	YES
			ⲕⲟⲩⲓ [kui] (SALFO), ⲕⲟⲩϫⲓ [kuʒi] (B)	Pyramid/ Middle Kingdom	YES	YES
		šr	ϣⲓⲣⲉ [šire] (S), ϣⲓⲣⲓ [širi] (B), ϣⲏⲗⲓ [šēli] (F), ϣⲁⲣ- [šar-] (SB)	Pyramid	YES	YES
			ϣⲏⲙ [šēm] (SB)	Pyramid	YES	POSSIBLE
			ⲥⲃⲟⲕ [sbok] (SB), ⲥⲃⲁⲕ [sbak] (AF), ⲥⲟⲃⲕ [sobk] (SB)	Middle Kingdom	YES	YES
		gby	ϫⲁⲃϫⲓⲃ [ʒabʒib] (B)	Pyramid	YES	YES
78	SMOKE	*hṭy*		Pyramid	YES	POSSIBLE
		ḳrr	ⲕⲣⲙⲧⲥ [krmts], ⲕⲱⲣⲙ [kōrm] (S), ϧⲣⲉⲙⲧⲥ [χremts] (B) No entry for F	Pyramid	YES	YES

79	STAND	*‘ḥ‘*	ⲱϩⲉ [ōhe] (S), ⲟϩⲓ [ōhi] (B)	Pyramid	YES	YES
80	STAR	*śb3*	ⲥⲓⲟⲩ [siu] (S), ⲥⲟⲩ- [su-] (S), ⲥⲓⲩ, ⲥⲉⲩ [siw, sew] (Pl.) (F)	Pyramid	YES	YES
		ḥrj.w		Pyramid	NO	YES
		(gnḫ.t)		Middle Kingdom	NO	POSSIBLE
81	STONE	*‘inr*	ⲱⲛⲉ [ōne] (SALF), ⲱⲛⲓ [ōni] (BF), ⲉⲛⲉ [ene] (S), ⲁⲛⲁ [ana] (BF)	Pyramid	YES	YES
		‘3t		Pyramid	NO	YES
82	SUN	*r’*	ⲣⲏ [rē] (SBO), ⲣⲉ [re] (FO), ⲣⲉⲓ, ⲣⲓ [rei, re] (A), ϧⲛⲓ [χni] (BO)	Pyramid	YES	YES
		‘itn		Pyramid	NO	YES
		šw		Middle Kingdom	NO	YES
		wn (see text)	ⲟⲩⲟⲉⲓⲛ [uoein] (S), ⲟⲩⲱⲓⲛⲓ [uōini] (B)	Pyramid	YES	YES
83	SWIM	*nby*	ⲛⲉⲉⲃⲉ [neebe] (S), ⲛⲉⲃⲓ [nebi] (B)	Pyramid	YES	YES
			ϩⲗⲟⲉⲓⲗⲉ [hloeile] (S), ϩⲉⲗϩⲉⲗ, ϩⲗⲱⲓⲗⲓ [helhel, hlōili] (B)	Late Egyptian	YES	YES
		ḫny	ϩⲓⲛⲉ [hine] (S), ϩⲓⲛⲓ [hini] (B)	Pyramid	YES	YES
84	TAIL	*sd*	ⲥⲁⲧ, ⲥⲏⲧ [sat, set] (SB), ⲥⲉⲉⲧ [seet] (S)	Pyramid	YES	YES
85	THAT	*pw/tw*	ⲡⲏ/ⲧⲏ [pē/tē] (S), ⲫⲏ/ⲧⲏ [p^{h}ē/tē] (B)	Pyramid	YES	YES
86	THIS	*pw/tw*	ⲡⲁⲓ/ⲧⲁⲓ [pai/tai] (S), ⲫⲁⲓ/ⲧⲁⲓ [p^{h}ai/tai] (B)	Pyramid	YES	YES
87	THOU	*ntk*	ⲛⲧⲟⲕ [ntok] (S), ⲛⲑⲟⲕ [nt^{h}ok] (B),	Pyramid	YES	YES
88	TONGUE	*ns*	ⲗⲁⲥ [las] (SBO), ⲗⲉⲥ [les] (AF)	Pyramid	YES	YES
89	TOOTH	*‘ibḥ,* *‘ibḥ-t*	ⲟⲃϩⲉ [obhe] (S), ⲁⲃϩⲉ [abhe] (A), ⲁⲃⲁϩ, ⲁⲃϩ [abah, abh] (F)	Pyramid	YES	NO
			ⲛⲁⲁϫⲉ [naaʒe] (S),	Old Kingdom	YES	YES

			ⲛⲁϫϩⲓ [naʒhi] (B)			
		(ṯs)		18th Dyn.	NO	YES
			ϣⲟⲗ [šol] (SB), ϣⲱⲗ [šōl] (S), ⳉⲁⲗ [$\chi_2$al] (A)	New Kingdom	YES	NO
90	TREE	*ḫt*	ϣⲉ [še] (SB), ⳉⲉ [χ_2e] (A)	Pyramid	YES	YES
		š3	ϣⲏⲛ [šēn] (SALF), ϣⲉⲛ, ϣϣⲉⲛ [šen, ššen] (F), ϣϣⲏⲛ [ššēn] (B)	Amarna/19th Dyn.	YES	YES
			ⲥⲉⲓ [sei] (SA), ⲥⲓ [sim] (A)	18th Dyn.	YES	NO
			ⲃⲱ [bō] (SBFL), ⲃⲟⲩ [bu] (A)	Old Egyptian	YES	YES
			ⲙⲉⲉⲣⲉ [meere] (S)	Book of the Dead	YES	NO
		nbs	ⲛⲟⲩⲃⲉ [nube] (O)	Pyramid	YES	NO
91	TWO	*sn-wy* (m.), *sn-ty* (f.)	ⲥⲛⲁⲩ [snaw] (SB), ⲥⲛⲧⲉ [snte] (S), ⲥⲛⲟⲩϯ [snuti] (B) NB – Many variant forms e.g. Masc. ⲥⲛⲁⲁⲩ [snaaw] (S), ⲥⲛⲉⲩ [snew] (ALFM), ⲥⲛⲉⲟⲩ [snew] (F), ⲥⲛⲁ [sna] (B), ⲥⲛⲱ [snō] (S), ⲥⲛⲟ [sno] (AL), Fem. ⲥⲛⲟⲩⲧⲉ [snute] (S), ⲥⲛⲏϯ [sēnti] (F)	Pyramid	YES	YES
92	WALK	*šm(y)*	ϣⲙⲙⲟ [šmmo] (SA), ϣⲉⲙⲙⲟ [šemmo] (B), ϣⲙⲙⲱ [šmmō] (S)	Pyramid	YES (SC)	NO
			ⲙⲟⲟϣⲉ, ⲙⲟϣⲉ [mooše, moše] (S), ⲙⲁⲁϩⲉ, ⲙⲁϩⲉ [maahe, mahe] (S), ⲙⲟϣⲓ [moši] (B), ⲙⲁⲁϣⲓ, ⲙⲁϣⲓ [maaši, maši] (F), ⲙⲟϩⲉ [mohe] (P)	New Egyptian	YES	YES
		(swtwt)		18th Dyn.	NO	YES
			ⲗⲉⲗⲓ [leli] (B)	Coptic	YES	YES

93	WARM	*ḫmm, šm*	ϩⲙⲟⲙ [hmom] (S), ϧⲙⲟⲙ [χmom] (B), ⳉⲙⲁⲙ [hlam] (A)	Pyramid	YES	YES
		śrf		Pyramid	NO	YES
94	WATER	*mw*	ⲙⲟⲟⲩ [mou] (S), ⲙⲱⲟⲩ [mōu] (AL), ⲙⲁⲩ [maw] (FLA)	Pyramid	YES	YES
		nnw		Pyramid	NO	YES
		(nwy.t, n.t)		Middle Kingdom	NO	YES
95	WE	*ᶜinn*	ⲁⲛⲟⲛ [anon] (SB), ⲁⲛⲁⲛ [anan] (ALF)	Pyramid	YES	YES
96	WHAT?	*wᶜ*	ⲟⲩ [u] (SB), ⲉⲩ [ew] (SL), ⲟⲩⲁ [ua] (M), ⲟⲩⲱ [uō] (S), ⲟⲩⲟ [uo] (A), ⲟ [o] (AL), ⲱ [ō] (SA), ⲟⲩⲛ [un] (SF)	Pyramid	YES	YES
		(iḫʿ)	ⲁϣ [aš] (SB), ⲉⳉ [eχ₂] (A), ⲉϣ [eš] (LF), ⲁⳉ [aχ₂] (P)	Pyramid	YES (SC)	YES
		ỉš.t, ỉšs-t		Pyramid	NO	YES
97	WHITE	*ḥḏ*	ϩⲁⲧ [hat] (SB)	Pyramid	YES	YES
98	WHO?	*ỉn-m*	ⲛⲓⲙ [nim] (SB)	Pyramid	YES	YES
99	WOMAN	*ḥm.t*	ⲥϩⲓⲙⲉ [shime] (S), ϩⲓⲟⲙⲓ [hiomi] (BF), ϩⲓⲙⲉ [hime] (S)	Pyramid	YES	YES
100	YELLOW	*ḳnjt*		18th Dyn.	NO	YES
			ⲙⲣⲟϣ [mroš] (SB)	Pyramid	YES	NO

WHY GLOTTOCHRONOLOGICAL APPEARANCES ARE COMPLETELY DECEPTIVE

The beauty of the Egyptian data is that it allows dating of lexical changes to within a few hundred years in a way which is not possible for a language with no written tradition, which was only recorded by linguists and ethnographers over the last few centuries.

Classifying the Pyramid texts as Old Kingdom, the sarcophagus texts as Middle Kingdom and the mathematical and medical texts and Book of the Dead as New Kingdom, we have:

FIRST APPEARANCE OF ITEM	TOTAL	COGNATES	o/w CHADIC	POSSIBLE COGNATES	NO COGNATES
-Old Kingdom	9				
-Pyramid texts	122				
Total Old Kingdom	**131**	**111**	**94**	**10**	**10**
-Middle Kingdom	16				
-18th Dynasty	9				
-19th Dynasty	5				
-Sarcophagus texts	1				
-Total Middle Kingdom	**31**	**26**	**25**	**1**	**4**
-New Kingdom	12				
-Mathematical texts	1				
-Medical texts	4				
-Book of the Dead	4				
-Total New Kingdom	**21**	**9**	**9**	**6**	**6**
Total Middle + New Kingdom	**52**	**35**	**34**	**7**	**10**
-Late Egyptian	7				
-Ptolemaic Era	3				
Total Late + Ptolemaic	**10**	**8**	**6**	**1**	**1**
Coptic Era	**10**	**7**	**7**	**2**	**1**
Questionable	**2**				**2**
Not attested in Coptic	**50**	**47**	**40**	**2**	**1**
Total	**255**	**205**	**180**	**23**	**25**

If we assume that a word was present in a language in spoken form long before it was written down, then attributing a date of 2500 BCE for words present in the Old Kingdom/Pyramid text, 1500 BCE as an average date for words attested for the first time in Middle/New Kingdom texts, 500 BCE as an average date for words attested for the first time in Late/Ptolemaic period texts and 500 CE as an average date for words attested for the first time in Coptic texts, we have the following:

	Old Kingdom 2500 BCE	Middle + New Kingdom 1500 BCE	Late + Ptolemaic 500 BCE	Coptic 500 CE	Other	Not Attested in Coptic	Total
Total	**131**	**52**	**10**	**10**	**2**	**50**	**255**

If we blithely assume a constant rate of lexical replacement, q, we can fit these data to a simple 3-period binomial model of form $(p + q)^3$, where the rate of conservation $p = 1-q$. I.e. if each period represents 1 millennium, and we start with an original population of Old Kingdom words around 2500 BCE, by 500 CE, the conserved Old Kingdom vocabulary would be p^3. In this case $p^3 = 131/255 = 0.5137$, and taking the cube root of this, we have $p = 0.8008$, giving $q = 0.1992$ – which falls well within the conventional 15-20% range of replacement rates assumed for glottochronological models.

There are nevertheless two problems with this model: one serious and the other fatal. We shall deal with these in turn:

The serious problem is how to account for the 50 words attested in Egyptian but not in Coptic, i.e. these are words which have simply disappeared since the size of the Coptic vocabulary has 'contracted' relative to Egyptian. It is clearly nonsensical to project a constant rate of vocabulary loss, since if we do, a) we have to assume that Coptic will continue to lose vocabulary even though there are no grounds for such an assumption, b) we have to pinpoint a date when an expression ceased to be used, when in fact, this phenomenon simply represents register, in that Egyptian has a larger literary vocabulary than Coptic, and like Latin, by the late/Ptolemaic period had reached a stage where the precursor of Coptic was a relatively simple everyday vernacular, while a conservative or deliberately archaising Egyptian was used for literary texts, in the same way that 'I have to' or 'I've got to' is low register while there are additional high register terms, such as 'I am obliged to' or 'It behoves me to' which are now archaic.

To play devil's advocate for a moment, we could nevertheless take these 'missing words' at face value and model them as dummy replacements, assuming that Egyptian was spoken until the end of the Ptolemaic period and that these words were then replaced in Coptic by zero entries. This would give the following data, which could then be used to calculate a 3-period binomial model and the optimal lexical replacement rate by minimising the sum of squares of the differences between the theoretical probabilities and the actual data[11].

	Old Kingdom 2500 BCE	Middle + New Kingdom 1500 BCE	Late + Ptolemaic 500 BCE	Coptic 500 CE	Other	Not Attested in Coptic	Total
Total	**131**	**52**	**10**	**52**	**0**	**0**	**255**

This exercise gives an optimal replacement rate of 19% – again, a normal result for glottochronology. However, and here is the fatal flaw in the argument: **even though a word may have only appeared for the first time in the Middle Kingdom or Late Period, the presence of a Chadic cognate shows that it has been present in Egyptian since the pre-Dynastic period.** In other words, the lexical replacement model founders on its inability to distinguish between new words and words which have been present in a language for a very long time, albeit without being recorded. I believe that there is an element of novelty in this approach, in that it adjusts the dating of lexical change by taking the external cognates of mother and daughter languages into consideration.

The discussion in this study is an attempt to justify and explain this proposition that a Chadic cognate entails the presence of an Egyptian lexical item in the earliest stages of the language. If, we nevertheless begin by accepting it at face value, however, it is clear that there is a significant change in the overall picture, when the Chadic cognates are removed from post-Old Kingdom categories and added back to the Old Kingdom category (which includes the Pyramid texts), in order to reflect the fact that these words were already present in the oldest stages of Egyptian.

---

[11] Assuming a constant rate of lexical replacement, q, we can fit this to a simple 3-period binomial model of form $(p + q)^3$, where the rate of conservation $p = 1-q$. I.e. if each period represents 1 millennium, and we start with an original population of Old Kingdom words around 2500 BCE, by 1500 BCE, a fraction p will remain, while q will represent replacement with Middle/New Kingdom vocabulary. By extension, by 500 BCE, a fraction p^2 of Old Kingdom vocabulary will remain, while pq will have been replaced during the second period by Late/Ptolemaic vocabulary, pq of Middle/New Kingdom vocabulary will have survived, and q^2 will represent Late/Ptolemaic vocabulary replacing Middle/New Kingdom vocabulary (as opposed to Old Kingdom vocabulary). Continuing this process to the third period, by 500 CE, we will have p^3 of Old Kingdom vocabulary, p^2q of Middle/New Kingdom vocabulary, $(p^2q + pq^2)$ of Late Period vocabulary and $(p^2q + 2pq^2 + q^3)$ of Coptic vocabulary.

	Present in Coptic but dating from Old Kingdom	Present in Coptic but dating from Middle + New Kingdom	Present in Coptic but dating from Late + Ptolemaic	Present in Coptic and dating from Coptic	Other	Not Attested in Coptic
Total	**131**	**52**	**10**	**10**	**2**	**50**
With Afroasiatic cognates	111	35	8	7	0	47
With Chadic cognates	94	34	6	7	0	40
Total adjusted for Chadic cognates	**178**	**18**	**4**	**3**	**2**	**50**
Total adjusted for Afroasiatic cognates	**181**	**17**	**2**	**3**	**2**	**50**

In this way, we can see that of the original 255 entries, only 22 are potential candidates for innovation, in that they apparently arose after the Old Kingdom but cannot be linked to Afroasiatic cognates.

A distinction is drawn here between Afroasiatic cognates, which include all other Afroasiatic families and Chadic, in so far as it cannot be ruled out that Afroasiatic cognates not attested in Chadic are borrowings by some unknown process, even though my own view is that this is unlikely, for reasons stated below. However, the various authors surveyed, notably Vycichl, only clearly identify 4 borrowings into Egyptian on the whole list: **ⲟⲩϩⲟⲣ** [uhor], **ϭⲁⲗⲟⲡⲟⲩ** [calopu], **ϫⲟⲕ** [ʒok], **ⲕⲁⲣⲁ** [kara].

Furthermore, internal borrowing (semantic change) and compound formation are relatively limited phenomena, accounting for 11 and 6 items respectively.

Of the 50 entries which have disappeared from Coptic, 47 have attested Afroasiatic cognates, while 36 were attested in Old Kingdom/Pyramid texts. By the same logic, we should actually ascribe Old Kingdom dates to these.

In this way, it becomes clear that of 252 items present in Old Egyptian, adding back cognates, we have 181 items surviving into Coptic, representing a rate of replacement of 10.44% per millennium, evidently a much lower rate than the apparent one. However, even this rate is not the true one, since, of the 71 replaced items, 47 represent words which were present in Ptolemaic Egyptian but not in Coptic, hence, if we calculate the rate of lexical change not between Egyptian and Coptic but between Old Egyptian and Late Egyptian over 2000 years, we have a replacement rate of (1- √(228/252)) = 5.44% per millennium.

DISCUSSION

Are Chadic-Egyptian cognates due to trading links or to linguistic conservatism?

As can be seen from a simple inspection of the data in the table, the overwhelming majority of Egyptian entries have cognates in other Afroasiatic languages, albeit with Chadic and Semitic cognates apparently predominating.

In order to quantify the degree of proximity of the various Afroasiatic languages, I counted the cognates between Egyptian and other Afroasiatic sources. At present, the only extensive sources of data are Orel and Stolbova's 1995 dictionary (cf. footnote 6) and Militarev's database on Starostin's 'Tower of Babel' website (cf. footnote 13). The data is as follows:

Numbers of cognates between Egyptian and other Afroasiatic language families reported by Orel/Stolbova and Militarev.

	Berber	Semitic	West Chadic	Central Chadic	East Chadic	Beja	Agaw	Saho-Afar	LEC	HEC	Warazi	Dahalo	Omotic	SC	Yaaku
Orel-Stolbova	104	370	484	380	290	67	60	49	111	59	23	41	63	58	3
Militarev	158	580	705	545	411	56	68	67	174	103	50	56	133	102	15

LEC = Lower East Cushitic, HEC = Higher East Cushitic, SC = South Cushitic

Numbers of cognates between Egyptian, Chadic, Berber and other Afroasiatic language families reported by Militarev.

	Berber	Egyptian	West Chadic	East Chadic	Beja	Agaw	Saho-Afar	LEC	HEC	Warazi	Dahalo	Omotic	SC	Yaaku
Total entries	**518**	**1,495**	**1,999**	**1,247**	**197**	**275**	**236**	**666**	**349**	**115**	**169**	**361**	**298**	**41**
Egyptian	158	-	705	411	56	68	67	174	103	50	56	133	102	15
% of total entries	*30.5*	-	*35.3*	*33.0*	*28.4*	*24.7*	*28.4*	*29.5*	*43.8*	*33.1*	*36.8*	*34.2*	*36.6*	*36.6*
East Chadic	190	411	574	-	71	99	87	230	123	40	60	146	103	16
% of total entries	*36.7*	*27.5*	*28.7*	-	*36.0*	*36.0*	*36.9*	*34.5*	*35.2*	*34.8*	*35.5*	*40.4*	*34.6*	*39.0*
West Chadic	257	705	-	574	95	146	123	317	184	58	93	202	159	28
% of total entries	*49.6*	*47.2*	-	*46.0*	*48.2*	*53.1*	*52.1*	*47.6*	*52.7*	*50.4*	*55.0*	*56.0*	*53.4*	*68.3*
Berber	-	158	257	190	57	62	54	145	82	25	33	92	51	17
% of total entries		*10.6*	*12.9*	*15.2*	*28.9*	*22.6*	*22.9*	*21.8*	*23.5*	*21.7*	*19.5*	*25.5*	*17.1*	*41.5*

These results carry a number of caveats and hence can only be regarded as provisional: firstly, the two data sets are not independent of each other, since Militarev draws his Chadic data from Orel and Stolbova and provides the latter with data on other Afroasiatic families. Secondly, the sample sizes vary greatly between families, with 1,495 entries for Ancient Egyptian but e.g. only 298 for South Cushitic and so may reflect a 'competence effect' – i.e. how skilled the authors are at identifying cognates. Secondly, since there are a large number of Chadic languages, the probability that one language will retain a genetic cognate is evidently higher than in a smaller family like Agaw, with only a few languages.

The fact nevertheless remains that the number of Chadic-Egyptian cognates is an order of magnitude greater than cognates between Egyptian and any other Afroasiatic language family, with the exception of Semitic.

If there were a tendency for extensive borrowing from Egyptian due to its 'high civilisation' status relative to its African neighbours, then we would expect to find far more cognates in the languages occupying areas between those of Egyptian and Chadic speakers, namely at the start of putative trade routes from Egypt to West and Central Africa (down to South Sudan and then across the Sahel belt) or via North Africa and then across the Sahara via the Hoggar massif/Tassili): notably Berber (in the Siwa Oasis), Beja in the Eastern Desert or Nubian (a Nilo-Saharan language), but this simply is not the case. Indeed, it is surprising how few Egyptian-Beja cognates there are, given that the latter language group was in continuously close proximity to Dynastic Egypt.

Indeed, West Chadic actually has more Egyptian cognates than East Chadic, which is presumably closer to the start of a trans-Sahel trade route.

As such, these results appear to be exactly the opposite of what one would expect if these cognates were due to extensive borrowing during the Dynastic period, and as such, we can only conclude that they are due to massive linguistic conservatism.

There are nevertheless good reasons for accepting this.

The routes between Egypt and the Sahel were blocked by early dynastic Egypt, if not well before.

For most of the period from 18,000-10,500 BCE, the Sahara had been even more extensive and hyperarid than is currently the case, so that outside of the Nile Valley, the Sahara was likely to have been uninhabited. An abrupt change in monsoon patterns around 8,500 BCE nevertheless led to rapid climate change, with the abrupt northward shift of tropical rainfall belts by up to 800 km within a few generations[12]. This led to very rapid early settlement in the Egyptian Sahara between 8,500-7,000 BCE, most notably with sites in the Great Sand Sea, which appeared from the late 9th millennium onwards and were abundant by the 8th millennium[13], but with only sparse settlement of the Nile Valley itself. We may assume that these populations either originated from the Nile Valley itself, which became increasingly marshy, or from the South.

This process was gradually reversed, with the development of farming in the Nile Valley but the progressive abandonment of the Egyptian Sahara. Hence, there is an absence of sites at Abu Ballas after 4,500 BCE, from Farafra after 4,000 BCE, from the Northern Oases after 3,500 BCE and hardly any activity in the Kiseiba-Nabta region after around 3,800 BCE[14].

By 5,300 BCE, only sites with permanent water, such as the Gilf el-Kebir plateau could still support human occupation, while the further advance of desertification caused the abandonment even of these by the very early dynastic period (i.e. 3,000BCE).

As such, any subsequent contact between Egyptian-speaking populations and Chadic/Berber-speaking populations would have to have taken place along several major 'corridors' running Westward from Egypt and Sudan into the Sahara/Sahel region between large sandsheets: a) Siwa oasis and then along the Libyan coast, b) between the Great Sand Sea and the Selima sandsheet via the Gilf el-Kebir (famous for the cave of swimmers), c) within the Sudan, to the south of the Selima sandsheet and southwest into Chad via the Wadi Howar, d) even further to the South in the Sahel zone.

Since before camels appeared in Africa in the 1st millennium BCE, movements of peoples were restricted to much smaller distances, the archaeological dates for the disappearance of these sites point to the inescapable conclusion that these putative routes were definitively blocked to major movements of peoples by the very early Dynastic

---

[12] Kuper, R. and Kröpelin, S., Climate-Controlled Holocene Occupation in the Sahara: Motor of Africa's Evolution. *Science,* Vol. 313, 11/08/2006, p. 803.
[13] *Ibid.* p. 804.
[14] Nicoll, Kathleen, Prehistoric Human Occupation and Hydroclimatic Change in Egypt and Northern Sudan, *Geoarchaeology: An archaeological jornal,* Vol. 16, No. 1, 47-64 (2001).

(3,200 BCE) period at the latest, and most probably, for at least 500 years before it. **Hence, all Egyptian-Chadic linguistic contacts must precede this date.**

We have linguistic confirmation of this, in so far as Old Egyptian is phonologically innovative relative to Chadic. Hence, we can observe a number of changes in Egyptian which were already present by the time of the Pyramid texts: (i) Afroasiatic *g* > Egyptian *ḏ*, (ii) Afroasiatic *l* > Egyptian *n*[15], (iii) Afroasiatic *k* > Egyptian *ṯ* with the original Afroasiatic values preserved in Chadic.

Hence, we have:

a) Proto-Afro-Asiatic **gay(H)-* 'say'; Egyptian (Pyramid texts) *ḏwy* 'call'; Proto-West Chadic **gay/H-* 'tell', 'say'; Proto-Central Chadic **gay-* 'call'.

b) Proto-Afro-Asiatic *g^{w}*ay-* 'body, corpse, belly'; Egyptian (Pyramid texts) *ḏt* 'body'; Proto-West Chadic **gaw-* 'corpse, carcass'; Proto-East Chadic **gway-* 'breast', 'corpse' – NB Semitic also preserves Afroasiatic *g*.

c) Proto-Afro-Asiatic: **lVb-* 'ashes'; Egyptian (Pyramid texts) *nby* 'ashes, flame, burn'; Proto-Central Chadic **lVḅ-* 'ash', Logone *lə́ḅə́* – NB *l* also preserved in Beja and Dullay.

d) Proto-Afro-Asiatic **lis-* 'tongue'; Egyptian (Pyramid texts) *ns* 'tongue'; Proto-West Chadic **ḥa-lis-um*, 'tongue (your); Proto-Central Chadic **ʔV-lyas-* Proto-East Chadic **lyas-an-* 'tongue'; NB – the *l* is preserved in Coptic dialects.

e) Proto-Afro-Asiatic **liw-* 'cloud, sky'; Egyptian (Pyramid texts) *nw.t* 'cloud'; Proto-West Chadic **liw-* 'cloud'.

f) Proto-Afro-Asiatic **lVw-* 'house, dwelling place'; Egyptian (Pyramid texts) *nw.t* 'village, town'; Proto-Berber **liw-* 'room'; Proto-West Chadic **luw-* 'house, hut'; Proto-Central Chadic **luw-* 'town'; Proto-East Chadic **ʔa-luw-* 'inside, in the house', 'straw hut'.

g) Proto-Afro-Asiatic **kVn-* 'rise, raise'; Egyptian (Pyramid texts) *ṯnj* 'raise high'; Proto-West Chadic **kwan-* 'rise', 'lift'.

h) Proto-Afro-Asiatic **k/ḳin-* 'count'; Egyptian (Pyramid texts) *ṯnw* 'count'; West Chadic **ḳuni-* 'count'.

i) Proto-Afro-Asiatic **kiw/y-* 'wind'; Egyptian (Pyramid texts) *ṯ3w* 'wind; West Chadic **kyay-* 'wind'; Central Chadic **ki* 'blow (wind)'.

Evidently, if the Chadic words were borrowings from Egyptian after this date, we would not expect Chadic to preserve the original Afroasiatic phonology.

This is not to deny that there were trading contacts between Egypt and Nubia itself. Indeed, during the Old Kingdom, a series of governors of Upper Egypt, such as Harkhuf (23rd Century BCE) undertook commercial expeditions into Nubia (Northern and Central Sudan) and there were maritime contacts with Punt (Ethiopia/Eritrea). There is no evidence, however, of any Egyptian penetration into the Sahel or transmission of Egyptian cultural objects to West Africa. This not only contrasts with the extensive megalithic activity in Northern Niger of the Pastoralists, but hardly fits with a people obsessed with funeral rituals and ensuring their well-being in the afterlife.

---

[15] It should be noted that this sound change does not occur in Coptic: e.g. ⲗⲁⲥ [las] (SBO), ⲗⲉⲥ [les] (AF). In theory, it should be possible to determine whether Coptic is conservative or whether there was a reverse *n* > *l* shift by checking whether Afroasiatic cognates maintain *l*, since if *n* occurs in Afroasiatic languages such as Chadic, the implication is that the Coptic *l* is an innovation. I have also found Egyptian *nhm* but Coptic ⲗϩⲏⲙ [lhēm] (S), ⲉⲗϩⲏⲙ [elhēm] (B); *Western* Chadic **lyam-* 'say'. Proto-Central Chadic **lam-* 'say', which tentatively suggests that Coptic dialects are more conservative than Old Egyptian. This is an interesting parallel to my conclusion that some Italian dialects are more archaic than Classical Latin.

Hence, while there was a "Silk Route" across the Sahel from Central Africa to the Southern Sudan, which provided luxuries such as ostriches and pygmies (prized for their dancing skills) during dynastic times, it is quite likely that the Egyptians were largely ignorant of its source, in the same way that Europeans knew little or nothing of China or India before the later Middle Ages. Indeed, its operators probably had a commercial interest in keeping it as mysterious as possible.

The location of Chadic

The Chadic group consists of 140 languages spoken in an area radiating in three directions from Lake Chad and split into three main subfamilies:

i) **West Chadic** languages, all spoken in Nigeria, with two subgroups: a) Hausa, Bole, Angas and Ron, b) Bade, Ngizim, Warji, Boghom.
ii) **Central Chadic**, spoken in an area overlapping Northern Cameroon, North East Nigeria and Chad, with three sub-branches: a) Tera, Bura, Kamwe, Lamang, Mafa, Sukur, Daba and Bachama-Bata, b) Buduma and Musgu, c) Gidar
iii) **East Chadic**, spoken in Southern Chad and in adjacent areas of Cameroon and the Central African Republic, with two subbranches: a) Tumak, Nancere and Kera, b) Dangaleat, Mokulu and Sokoro.
There is also another sub-branch, Masa, spoken in South West Chad and Cameroon.

Chadic is thus geographically separated from the Cushitic/Omotic languages by Nilo-Saharan languages running North-West to South-East from Chad to the Great Lakes, most notably Kanuri. Nilo-Saharan languages are also spoken to the West of Chadic in Mali (Songhay) and along the Upper Nile in Sudan (Nubian).

Essentially, there are two major theories as to how Chadic came to occupy its current territory: a) Christopher Ehret's Trans-Saharan theory and b) Roger Blench's Inter-Saharan theory.

According to Ehret, Afroasiatic has its origin in the Horn of Africa, although in the late Palaeolithic, a "Northern Erythraic" subgroup took advantage of improvements in climate to spread up the Nile and in an arc through North Africa. Ehret proposes that during the wet period when what is now the South and Central Sahara was savannah, there would have been a linguistic boundary running roughly along the Tropic of Cancer, with Northern Erythraic languages to the North and Nilo-Saharan languages to the South.

There were two major intrusions across this boundary. Due to deteriorating climatic conditions, the Central section of this Northern Erythraic group, represented by proto-Chadic speakers, moved South to the Lake Chad region, with Ehret dating this migration to around 6,700-5,500 BCE. The Chadic migration would have been facilitated by the presence of a chain of large lakes in the Central Sahara, ending with Lake Chad, which in the mid-Neolithic could have been as large as the Caspian Sea is today.

By Ehret's theory, this Southward Chadic migration represents an even earlier absolute terminal date for extensive Egyptian-Chadic contacts and the start of spatial isolation which has continued until the present. As such, according to his theory, lexical cognates between Chadic and Coptic must precede the emergence of Coptic by over 5,000 years. Indeed, if anything, this date could be greater, since while Chadic and Egyptian speakers would have occupied adjacent territories during the early Neolithic, prior to the trans-Saharan migration (with Chadic speakers essentially concentrated in Northern Libya), this would have been at a time when there was extremely limited cultural contact, since even then, Lower Egypt would have been flanked by desert to the West. Nor can we even rule out the possibility that the ancestors of these languages were already differentiated at the time of the initial expansion of Northern Erythraic speakers from the Horn of Africa.

It is worth noting that Cruciani et al.[16] have recently provided genetic evidence which appears to corroborate the Trans-Saharan migration of Chadic speakers, namely the Y-chromosome R1b1a R-V88 haplogroup, which appears at particularly high frequencies among the Berbers of the Siwa Oasis in the Egyptian Sahara and among Chadic speakers. Presumably, this reflects admixture between the proto-Chadic population before it migrated southward and migrants from outside Africa, since if Ehret is correct, and the Northern Erythraic speakers had only moved North from the horn of Africa a few millennia beforehand and hence shared a relatively recent common origin with Cushitic speakers, then we would not expect to find much in the way of genetic signatures which differentiate the two groups.

The Rise of Bovid Pastoralism

The major cultural event in the Saharan region during the Neolithic was the domestication of indigenous *Bos primigenius* cattle, with its ostensible origin on the Egyptian-Sudanese border at Nabta Playa/Kiseiba[17], which subsequently led to the development of a relatively advanced pastoralist culture along a broad trans-Saharan corridor running from sites such as Nabta Playa and Bir Kiseiba in Upper Egypt/Northern Nubia along the border of Libya/Chad/Northern Niger, to the Tassili Massif in the South of Algeria[18]and along the border of Morocco/Spanish Sahara to the Atlantic. Cattle may have been present at Nabta/Kiseiba sites as early as 9,000 BCE[19]

In this way, we have early sites at Délébo and Enneri Bardagué in Chad, dating to 5,855 BCE and 5,783 BCE, Uan Muhuggiag in Libya, dating to 4,930-4,830 BCE, Adrar Bous (Niger, Aïr mountains) 5,180 BCE and Grotte Capeletti in Algeria dating to 4,680 BCE, Rabak (Sudan) dating to 4,930BCE, Adrar Tiouyine (Algerian Sahara) 4,020 BCE. Bovid pastoralism did not spread south into Northern Mali or Kenya, however, until the middle of the 3rd millennium, presumably because these areas did not offer the savannah conditions favourable to pastoralism until then.[20]

Various scholars have attributed the impetus for this movement into the Sahara in the 8th-7th millennia to successive waves of drought at 7,600, 6,800-6,500, 6,100, 5,800 and 5,500-5,400 BCE, albeit within a context of savannah, rather than desertification, which happened at a later stage. Such climatic changes were also likely to have been responsible for a Northward movement along the Nile, as well as from the Levant into the Nile Delta.

The **Trans-Saharan Bovid Pastoralist Culture** appears to have had a rich mythology/ritual, in which cows (and bulls) predominated (with bovids remaining a dominant element in Egyptian culture), as witnessed by inhumations of young cows around Nabta, but also astronomical knowledge, which presumably became essential for coordinating cattle movements with rainfall patterns as the weather deteriorated. Wendorf et al.[21] investigated Nabta Playa and found megaliths aligned with the stars in Orion's belt, as well as with Sirius, dating back to at least 4,800 BCE and possibly indicating alignments of Sirius around 6,300 BCE[22].

---

[16] Cruciani et al., Human Y chromosome haplogroup R-V88: a paternal genetic record of early mid Holocene trans-Saharan connections and the spread of Chadic languages, *European Journal of Human Genetics* (2010), 1-8.

[17] Originally suggested by Wendorf, but still controversial. See e.g. Brass, Michael, Tracing the Origins of the Egyptian Cattle Cult, in Eyma, A. K. & Bennett, C. J. (Eds.), *A Delta Man in Yebu*, Universal Publishers, 2003, who argues that the environmental evidence does not support the notion that Nabta Playa was the original site of domestication of *Bos Primogenitus*.

[18] As documented in Hassan, p. 36 of *Droughts, Food and Culture,* Springer, 2002.

[19] Cf. 1, *ibid.*, p. 804

[20] Cf. 4, *ibid.* p. 36-7

Ehret has presented extensive evidence in support of the thesis that the prime movers behind the spread of this pastoralism were Nilo-Saharan speakers and that early Egyptian sites were dissimilar from those around Nabta Playa. He has also documented borrowings from Nilo-Saharan languages into Egyptian itself[23]. His theory has received some tentative dental supporting evidence from Joel Irish, who suggests that the late Neolithic populations at Nabta Playa were unlike the Egyptians and closer to sub-Saharan Africans[24].

Having said this, if proto-Chadic speakers are linked to pastoralism then it evidently strengthens the case for a migration/last date of contact with Egyptian in the 6th millennium, since they would have been 'pulled southwards' by the need to move their cattle to greener pastures as the process of desertification took hold.

If anything, in the mid-Neolithic, such speakers were herders of ovicaprids (sheep and goats), which are better adapted to semi-arid territories than bovids. The appearance of ovicaprids in Africa may be identified with deteriorating climatic conditions, which also forced sheep and goat herders to migrate across Sinai, with such animals already present in Egypt at the Bashendi A site at Dakhla (6,400-5,400 BCE) as well as at the Nabta sites, possibly as early as 7,000BCE, showing early cultural contacts between Upper Egypt and the Levant.

It also appears that sheep and goats spread from the Nile Delta, down to the Western Saharan oases of Farafra and Dahla by 5,700-5,600 BCE and from there along the North African coast, reaching the Hawa Fteah coastal site in Cyrenaica by 5,600 BCE and the Grotte Capeletti site in the Aurès Mountains of Algeria by 5,400 BCE. In parallel, ovicaprids spread up the Nile to Nabta Playa by 5,400 BCE and from there to the Acacus mountains of Libya by 4,900 BCE.[25]

Sites in the Nile Delta such as Merimde (from around 4,900 BCE) and in the Fayyum depression (from around 5,300 BCE), such as Bashendi B (5,400-4,000BCE) and Abu Ballas (5,500-4,900BCE), at the Southern extremity of the Great Sand Sea, show the first evidence for bovid pastoralism in Lower Egypt, although the domesticated cattle at Merimde appears to be of Levantine origin.

Ehret's model which posits Nilo-Saharan speakers as the main drivers behind the Saharan pastoralist culture, is highly plausible. At the same time, his "Saharan Mason-Dixon line" model which has Afroasiatic speakers to the North and Nilo-Saharan speakers to the South of the Tropic of Cancer is probably an oversimplification, since in a savannah-like environment, where the entire area was suitable for pastoralism, this boundary was presumably a highly porous one and hence the linguistic geography of the region must have been "messy".

---

[21] Wendorf, F. et al. (1992/93). Megaliths in the Egyptian Sahara. *Sahara* 5: 7-16, cited in Hassan, *op. cit.*, p. 17

[22] Brophy suggested that these megaliths were aligned with Sirius at a date of around 6,300 BCE, but went off in pursuit of a 'Stargate'-style interpretation, suggesting that they encoded extremely advanced astronomical knowledge, e.g. distances of stars from Earth, relative sizes of stars, etc. Cf. e.g. Mark H. Gaffney, The Astronomers of Nabta Playa, in *Atlantis Rising,* 56, Mar/Apr 2006. This is rebutted in Astronomy of Nabta Playa, African Sky, McK Malville, J., Schild, R., Wendorf, F. and Brenmer, R., Vol. 11, p. 2, July 2007, which argues for later dates and that the astronomical evidence encoded in the megalithic circles was not particularly sophisticated. I nevertheless wonder whether Nabta Playa is the ultimate origin of the astronomical knowledge, e.g. of the Dogon.

[23] Cf. Table 16, p. 163 of Ehret, C., *History and the Testimony of Language*, University of California Press, 2011.

[24] Irish, J., Ch. 18 of *Holocene Settlement of the Egyptian Sahara: The Archaeology of Nabta Playa*, (Eds.), Wendorf F., Schild, R., Nelson, K., Kluwer Academic, New York, 2001.

[25] Le Quellec, Jean-Loic, Rock art and cultural responses to climatic changes in the Central Sahara during the Holocene, Ch. 16 of *Exploring the Mind of Ancient Man : Festschrift to Robert G. Bednarik*, New Delhi, 2006.

In this way, the Grotte Capeletti site in Northern Algeria, which has an early date of 5,400 BCE for ovicaprids and 4,500 BCE for bovids, would appear to fall well within Afroasiatic territory, being too far north for a penetration by Nilo-Saharan speakers, albeit with the location and the temporal separation between the arrival of ovicaprids and bovids a millennium later arguing for separate origins, with the former arriving via the Mediterranean and the latter via the Sahara.

In addition, pastoralist sites such as the Acacus and Tassili lie very close to Ehret's Tropic of Cancer boundary, so that it seems unlikely to me that the Afroasiatic speakers would have been completely isolated from such cultural developments. Furthermore, Ehret also points out that a Northern tradition of rock art extends as far South as the Aïr mountains and may correlate with the spread of Chadic speakers. Furthermore, Ehret's dates of 6,700-5,500 BCE for the Chadic migration appears to predate the arrival of pastoralism in Northern Niger and Southern Algeria.

At the same time, while he may associate bovid pastoralism with a Nilo-Saharan origin, the fact remains that bovine-related ritual is extremely important in Egyptian culture, which also presumably acquired the astronomical knowledge of Nabta Playa, as evinced by sites such as Giza.

Furthermore, the Abu Ballas (5,500-4,900BCE) site, at the Southern extremity of the Great Sand Sea, where bovid remains are present in the late 6th millennium, earlier than the Gilf El-Kebir sites immediately to the West, would appear to fall within an Afroasiatic context, in that it was probably linked to the Dakhla and Farafra oases[26]. Conversely, the ceramic tradition which originated in Gilf El-Kebir appears to have spread to the Laqiya sites in the Sudan, South of the Selima sandsheet, for which a Nilo-Saharan reading is more plausible.

A curious point is the extensive documentation of "Egyptian" words and cultural artefacts in Niger-Congo languages, most notably in languages of the Atlantic subfamily, such as Wolof and Pulaar, by the Senegalese school of Cheikh Anta Diop, and most notably by his disciple, Aboubacry Moussa Lam[27].

Intriguingly, in an article on the Tin Hakaten site in the Algerian Tassili (150 km to the South of the Djanet oasis), Ginette Aumassip[28] reports several phases of occupation, beginning with the "round headed" peoples in the 8th millennium BCE, albeit who did not leave characteristic cave art there, ostensibly because the site was not a sanctuary associated with such paintings. This occupation appears to have been interrupted for several centuries in the middle of the 6th millennium due to a dry period, with reoccupation towards the end of this millennium by a new bovid-based pastoralist population which flourished until the 4th millennium and left cave art consisting of bovine cattle and 'enigmatic figures which [the Malian writer] Hampaté Ba, was able to translate into the Peul ritual. In this way, a very strong cultural link was established between these Tassilian populations of the 6th-4th millennia and the Bororo Peuls'. Aumassip also reports the first bovine inhumation at the Mankhor site in the Tassili N'ajjer in Algeria, dating to around 3,000 BCE. While common in Egypt, these had previously been unknown in the Sahara. This is further *prima facie* evidence for the presence of Afroasiatic speakers in the Algerian Neolithic, although the presence of the Songhay languages in Mali, which are Nilo-Saharan, also points to a deep westward penetration of Nilo-Saharan speakers.

---

[26] *ibid,* p. 805.

[27] Inverted commas are used most emphatically here, since such cognates and other cultural data were used by such authors to build a grand theory of Pharaonic Egypt as a "black" civilization, with the Wolof and Pulaar descended from refugees who ostensibly fled Egypt during the Middle Kingdom. Diop's views were given space in the *UNESCO History of Africa* (1981, 1990). A reading of Egyptian iconography as a faithful mirror of ethnicity is nevertheless simply wrong-headed, as is the view that the Egyptian term for Egypt, *Kmt* 'the black land', implies that its inhabitants were black (it most likely refers to the black alluvial mud of the Nile) and an insistence that Egyptian and Niger-Congo are parts of a pan-African language family, flying in the face of the consensus based on Greenberg's work. Furthermore, a major exodus from Egypt to West Africa would presumably have left traces of writing/ritual monuments, in similar fashion to the extensive traces of megalithic activity in Northern Niger left by Neolithic bovid pastoralists or the monumental tradition in Nubia. While this interpretation appears to be widely discredited among serious scholars, I suspect that Diop, Obenga, Lam et al. are actually documenting a genuine phenomenon, namely the interaction of Niger-Congo and Afroasiatic speakers in Niger and Algeria. Hence these "Egyptian" words may actually be borrowings from Proto-Chadic and thus mark the extent of westward penetration of such speakers.

[28] Aumassip, Ginette, Le site néolithique de Tin Hakaten, *Préhistoire de l'Algerie, Dossiers d'Archéologie*, pp. 72-79.

Blench's Inter-Saharan model seems unlikely

The second major model for the spread of bovid pastoralism is Roger Blench's model, which argues for direct diffusion of Chadic speakers from Cushitic areas along the Wadi Howar route in the Southwestern Sudan.

While the Wadi Howar route may have been a minor pastoralist route, it can hardly have been the original route, since there are no sites[29] on this route with bovid remains until the late 6th millennium, and these are not abundant until after 5,000 BCE, 2,000 years after the Nabta Playa sites, which appear to have been the nucleus of cattle domestication.

In linguistic terms, our own elaboration of linguistic evidence of Orel/Stolbova and Militarev clearly shows that cognates between Egyptian and Chadic are much more extensive than with Cushitic.

While there are Northern Cushitic languages, such as Beja, which were presumably spoken much closer to the Nabta Playa/Kiseiba sites, there is a conspicuous absence of extensive cognacy. It also seems to me that for Blench's linguistic evidence to hold water, he has to show that Chadic/Cushitic cognates relating to pastoralism do not have Egyptian or Semitic counterparts. A cursory comparison of his data with Militarev's database reveals that his data omits Egyptian/Semitic data[30].

Conclusion

This paper This paper has attempted to explore a Coptic/Egyptian Swadesh list with a degree of detail which I believe to be unprecedented. As a non-specialist in the field, I have been obliged to take the Afroasiatic etymologies of other scholars, notably Militarev, Orel, Stolbova and Dolgopolsky at face value, but assuming that their work is sound, and I see no a priori reason to doubt this, the analysis points to several unequivocal conclusions: a) Egyptian shows far more lexical similarity with Chadic than with Cushitic, even taking into account sample sizes, hence *a priori*, these results offer support for Christopher Ehret's model for the spread of the Chadic languages; b) this similarity is in turn evidence for conservatism, since the window for borrowing between Chadic and Egyptian was closed by the desertification of the Sahara well before the start of the 3rd millennium BCE; c) it follows that apparent innovations in Egyptian are not innovations at all, but cases of words which had been 'lurking' in the spoken language for millennia before being recorded in writing; d) the major lexical process at work in the transition from Egyptian to Coptic is not lexical change but lexical loss; e) the above conclusions entirely undermine the validity of glottochronology as a tool for estimating common ancestor dates for two related languages, by offering robust evidence that the first appearance of a new word in Egyptian/Coptic is not the earliest date of occurrence of that word in these languages, since its presence in a sister family of Afroasiatic, notably in Chadic, is a clear indication of a much older presence in Egyptian, due to the isolation imposed by desertification of the Sahara and to the fact that the much lower frequency of cognates between Egyptian and other geographically adjacent Afroasiatic languages rules out subsequent borrowing between Chadic and Egyptian.

---

[29] cf. Kuper, R. and Kröpelin, S., Climate-Controlled Holocene Occupation in the Sahara: Motor of Africa's Evolution. *Science,* Vol. 313, 11/08/2006.

[30] Hence, *#ła* 'cow, cattle', probably also includes Egyptian *ʿiw*; *#m-r-k* 'castrated small ruminant' is not restricted to Omotic and Chadic, but has the extensive Semitic **ʔimmi/ar-*; *#k-r* 'donkey' has Proto-Semitic **(ʔa-)kurr-* 'young of ass'; *#kol* 'goat' is not solely an Omitic/Cushitic/Chadic cognate but also has *karr* 'ram' in Semitic and *kVrr* 'ram/lamb' in Proto-Berber.

São Paulo, May-June 2012.

The author would like to thank Professor Christopher Ehret (UCLA), Dr. Peter Underhill (Stanford University), Dr. Joel D. Irish (University of Alaska) and Professor Harold Fleming (Emeritus, Boston University) for their invaluable discussions and assistance with bibliographical material, as well as his long-suffering editor, John Bengtson (ASLIP) for his patience. He also wishes to acknowledge his intellectual debt and gratitude to Alexander Militarev, Olga Stolbova, Vladimir Orel, Sergei Starostin and Aron Dolgopolsky for making their work freely available on the Internet but points out that unless specifically documented, all errors and interpretations are his own.

APPENDIX: EXPANDED SWADESH LIST FOR EGYPTIAN AND COPTIC

[KEY at end of table]

No.	English	Ancient Egyptian (Pyramid texts)	Coptic	Comments
1	ALL	*nbw*	ⲛⲓⲙ [nim] (SALFO), ⲛⲓⲃⲉⲛ [niben] (B), ⲛⲓϥⲉⲛ [nifen], ⲛⲓⲃⲓ [nibi] (F)	T1.107 Arabic *bi-nawb-i* 'fully, entirely, at all'; East Berber: Siwa *nnūba* 'all, whole'. OS2105 Afroasiatic **reb-*; West Chadic **ryab-* 'all': Sha *ryap*
2	ASHES	*zz*		V197- M's Old Egyptian form does not agree with V – *zzw* 'powder', *ss* 'ash'. Survives in Coptic as ⲥⲓⲥⲉ ⲕⲁⲗⲁⲙⲓⲉ (S) 'eye powder', probably 'calamine' powder No immediately obvious Afroasiatic cognates.
			ⲕⲣⲙⲉ [krme] (S), ⲕⲉⲣⲙⲓ [kermi] (B), ⲕⲩⲣⲙⲓ [kwrmi] (F), ⲕⲣⲙⲉⲥ [krmes] (SA)	V85 < *ḳrmt* 'burnt tents' – 19th Dyn. (13 BCE), V suspects this is a borrowing from Semitic. This seems unlikely to me, as present in Chadic. Proto-Afro-Asiatic **ḳar-* 'burn; fire'; Proto-West Chadic: **ḳar-* 'burn', Ankwe=Goemai: *kuur*, Cagu: *ḳər-*, Zul: *kə̀ri*; Proto-Central Chadic **kar-* 'fire', 'burn', Dghwede=Zəɣwana *kárà* 'fire', Mandara=Wandala *ḳáṛạ* 'fire', Malgwa *kára* 'fire', Glavda *káárà* 'fire', Guduf *kháṛà* 'fire', Mofu-Gudur *-kákər-* 'burn'; Proto East Chadic: **kar-* 'become hot', hot, Mubi *kèrì* 'become hot', Kajakse *kàri* D1041 **ḲE'ɣ̣ʔ'aḷa* 'to burn' or link to **ḳarH*$_2$ 'burn, heat'.

			ⲉⲧⲛⲓϧ [etniχ] (A)	Spiegelberg explains as compound _ʿiwtn ny ẖt_ ‘dust of the fire’ (V47) – same formation as Beja _ne3ēt hāš_. _ʿiwtn_ ‘earth, soil’ not attested before 18th Dyn. (16-14 BCE). NB V notes possible confusion with an entire complex of words meaning ‘fire’, ‘darkness’, ‘obscurity’.
		_t3w_		OS2344 ‘ash’ West Chadic _*taw-taw_ (reduplication): Kulere _atoto_
3	BARK		ⲕⲟⲩⲕⲉ [kuke] (S), ⲕⲟⲩⲕⲓ [kuki] (B)	V74 < _ḳḳ_ ‘to peel’ Ptolemaic-Roman period, but prob. much older, as linked to Proto West Chadic _*(ʔa)ḳuḳ-_ ‘bark’ (EHU-M), also D1946 _*qewV_ ‘bark, crust’, although D himself links the Egyptian word to D1105 _*Ḳäŋḳa,hV,_ ‘shell, conch’. cf. 75 SKIN.
4	BELLY	_ẖt_	ϩⲏ [hē] (S), ϧⲓ [χi] (A)	_ẖi < ẖt_ (Pyramid texts) Proto-Afro-Asiatic _*ẖVwVy-_ ‘stomach’; Proto-Central Chadic _*ẖway-_ ‘stomach’, ‘belly’, ‘intestines’ Chibak _ɣəy_ ‘intestines’, Margi _xay_ ‘intestines’,Wamdiu _ẖay_ ‘stomach’, Higi Futu _xwi_ ‘stomach’, Higi Baza _xu_ ‘stomach’, Higi Nkafa _xwi_ ‘stomach’, Higi Ghye _xwi_ ‘stomach’, Kapsiki=Higi Kamale _xwu_ ‘stomach’, Zime-Batna _yā_ ‘belly’, Masa _háya_ ‘belly’. Etymology of _kala-ẖē_ disputed: linked to _ḳrḥ.t_ ‘primordial goddess’, ‘ancient nobility’. Maspero: ‘womb from which living creatures emerge’. Crum: _kala + ẖē_, doesn’t explain etymology of _kala._ Lange identifies word with _krh3.t_ ‘womb’ (V80) – remote link to Nostratic [_*gERV_ ‘entrails, guts’ D655a].
			ⲛⲏϭⲉ [nēǯe] (S), ⲛⲉϫⲓ [nēǯi] (B)	V153 ‘breast, stomach’ < _ng3yy_ (Cerny) – Ramessid period (1300-1100 BCE) – but link to Nostratic [D805a _Homgü_ > Chadic _*ʔVng_^{w} ‘breast’] – i.e. not an innovation but a very old word.
			ⲙⲉⲥⲧϩⲏⲧ [mesthēt] (SB), ⲙⲉⲥⲧⲛϩⲏⲧ [mestnhēt] (SB)	V123 ⲙⲉⲥⲧϩⲏⲧ (SB), ⲙⲉⲥⲧⲛϩⲏⲧ (SB), < Compound of _msty_ ‘basket for fruit, fish, measure, burden’ + _ẖ3t.y_ ‘heart’ = ‘basket of the heart’.
5	BIG	_ʿ3_	ⲟ [o] (S), ⲱ [ō] (B), ⲁ [a] (F)	V154 < Pyramid text. EHU-Militarev links to Proto-Afro-Asiatic _*riyVʕ-_ ‘grow’ Proto-Afro-Asiatic _*riyVʕ-_ ‘grow’; Proto-Semitic _*rVyVʕ-_ ‘grow’, Arabic _ryʕ [-i-]_, Proto-West Chadic _*riy-_ ‘multiply’, Tangale _riye_; Proto-Central Chadic _*riy-_ ‘increase’; Musgu _ríyí_
			ⲛⲓϣϯ [ništi] (B), ⲛⲟϭ [noc] (S)	V153. Disputed etymology. Fecht derives from _ḳnyw, naḳyew_ but unlikely. Westendorf/Černy from _nẖt_ ‘strong’ (Pyramid text). V notes ‘recent word, of popular origin’ – But the fact that there many variants suggests considerable age, indeed, word appears to coincide with D1553 _n̄VNĉV,ʔV,_ ‘high, big, strong’ – linked to _nan_ in West Chadic. Also, _wr_ in Old Egyptian shows parallel semantic association of ‘big’ and ‘strong’.
		_wr_	ⲟⲩⲛⲣ [unr] (SB), ⲟⲩⲛⲗ [unl] (F)	V236 _wr_ ‘large’ > ‘how much’ in Coptic – documented as an interrogative ‘how much’ in Mathematical papyri – i.e. before 14BCE. Proto-Afro-Asiatic _*war-_ ‘be big, strong’; Semitic _*wVrVy-_ ‘be fat’, Arabic wry; Proto-West Chadic _*war-_ ‘strength’, Ankwe=Goemai _warr [?]_; Proto-Central Chadic _*wVr- /*ʔʷVr-_ ‘big’, ‘old’,‘great’, ‘increase’, Bura _wala_ ‘big’, ‘great’, _ʔwəla_ 'large', Mbara _wèlá_ ‘old’, Gudu _ʔúrà_ ‘increase’, Musgu _wēl,_ fem._ulı̃_ ‘old’, ‘big’; East Chadic Lele _wēlē_ ‘largeness’ (WP 95), Proto-South Cushitic _*ʔur-_, ‘big, large’ Iraqw (Mbulu) _ur_; Omotic Chara _uräri_ ‘all’.
6	BIRD	_ʒpd_	ⲱⲃⲧ [ōbt] (S)	V248 _ʒpd_ survives in Coptic as ⲱⲃⲧ (S) ‘goose’ – V. says probably a present participle _3āpid_ ‘animal which is hurrying’. Seems more likely to be related to D140 _*ʕup̱V_

				'take wing, up'. Also OS10 Egyptian *3bnn* 'kind of bird' (Old Kingdom); Akkadian *abbunnu* 'kind of bird'; East Chadic *bVnan-* 'duck',
			ϩⲁⲗⲏⲧ [halēt] (SB), ϩⲁⲗⲉⲧⲉ [halete] (A)	V296 Hence, as a semantic parallel, ϩⲁⲗⲏⲧ 'flying thing' < ϩⲱⲗ 'to fly' < *ḥry* 'to fly, go up' – Late Egyptian (700-400 BCE). Also V346 ϭⲣⲉ 'birds (collective)'. May derive from much older *ḥrt* 'sky, heaven' or compounds for 'upper side, above', but M's EHU entries suggest that idea of 'flying' was already present in PAA and hence, there was presumably an earlier form *hly* 'fly' in Old Egyptian. Proto-Afro-Asiatic **ḥVwal-* 'jump, fly'; Proto-Semitic **ḥVwVl-* 'jump (on horse back)'; Arabic *ḥwl* [-u-]; Proto-East Chadic **Hwal-/*Hal-* 'jump', Tumak *wál*, Dangla *ãlé.* D877 *kolu* 'to fly, wing' as possible cognate.
7	BITE	*psḥ*	ⲡⲱϩⲥ [pōhs] (S)	V167 Also ⲡⲱϩⲥ (S) T2.507 T finds plausible: Afroasiatic **p-3* 'sting'; West Chadic: Angas **pus* 'shoot arrow', 'sting'; Central Chadic Mafa *fuza'a* 'pierced'; East Chadic Mokulu *'áppìzá* 'tattoo, pierce'; West Chadic **b-s* 'sting'
			ⲗⲱⲕⲥ [lōks] (S), ⲗⲕϭⲥ [lkcs], ⲗⲱϧ [lōx] (S), ⲗⲟⲩϧ [lux] (SB), ⲗⲟϧ [lox] (B)	V96 Also present as ⲗⲕϭⲥ, ⲗⲱϧ (S), ⲗⲟⲩϧ (SB), ⲗⲟϧ (B) < *nsḳ* (New Egyptian) (16-11 BCE) – Possibly linked to D1267 **LigꞋʕæ* 'lick, sip, suck'/D1286 **Lûka* 'swallow' Possible Afroasiatic cognates.
			ⲗⲁⲡⲥⲓ [lapsi] (B)	V98 - Also present as ⲗⲉⲫⲉ(S) < *nsb* 'swallow' – already in Pyramid texts (26 BCE). Possible link to Semitic (e.g. Arabic *lasib*, *yalsab* 'to lick' – in which case Coptic form is more conservative than the Old Egyptian form. – D1314 **LaʔpV̄* 'gulp, eat' looks more likely – Semitic root *lʔp*, East Chadic *lébḅe* 'throat'.
			ⲙⲉϩⲣⲱ [mehrō] (S)	Other forms: ⲙⲉϩⲣⲱ (S) – compound of ⲙⲟⲩϩ 'burn' + V71 ⲣⲟ 'mouth' = 'bite'
			ⲟⲩⲱⲙ [uōm] (SB), ⲟⲩⲉⲙ [uem] (SB)	V232 ⲟⲩⲱⲙ (SB), ⲟⲩⲉⲙ (SB) 'eat, bite' < *wnm* 'eat' see 23 EAT
			ϫⲱⲱⲕⲉ [hōōke], ϫⲟⲩⲟⲩⲕⲉ [ǯuuke] (S)	V325 ϫⲱⲱⲕⲉ, ϫⲟⲩⲟⲩⲕⲉ (S), etc. < *ḏḳ*ʿ - No immediately obvious Afroasiatic cognates or Old Egyptian etymology found.
8	BLACK	*km*	ⲕⲁⲙⲉ [kame] (SA), ⲭⲁⲙⲉ [ǯame] (B), ⲕⲉⲙⲓ [kemi], ⲕⲉⲙ [kem] (F)	V81 Proto-Afro-Asiatic **kum-* 'be black'; Semitic **ʔVka/um-* 'black'; Proto-Central Chadic **kaHVm-* 'shadow', 'yesterday', Buduma=Yedina *kaimē* 'shadow', Banana kãmá 'yesterday', Proto-Agaw **kVm-* 'be evening', Awiya (Aungi) *kəm-ən*; Proto-Warazi **kum-* 'black', Gawwada (Gawata) *kumma* D1066a **ḲUmV̄* 'black, dark'
9	BLOOD	*znf*	ⲥⲛⲟϥ [snof] (SB), ⲥⲛⲱⲱϥ [snuuf] (S), ⲥⲛⲱϥ [snōf] (B)	V193 – links to Berber Proto-Afro-Asiatic **ǯin-*; Proto-Berber **-zVni* Ghat *a-zəni*, Ahaggar (Tahaggart) *a-hni*, Tawllemmet *a-zəni*, *a-žni*, *a-šni*, Taneslemt *a-šni*; Proto-West Chadic **ǯini-*, Hausa ǯíni̇̀; Central Chadic *(H)aǯin* 'blood', Gudu aǯin; Proto-Omotic **ʒVnn-* (or < **ʒVm-n-?*) 'pus', Zaysse zonn-e.
10	BONE	*ḳs*	ⲕⲁⲥ [kas] (SB), ⲕⲉⲥ [kes] (L)	V87-88 Proto-Afro-Asiatic **ḳ(ʷ)as-* 'bone'; Semitic **ḳʷayṣ-* or **ḳʷaṣṣ-* 'joint, point of connection between bones';

				Proto-Berber **i-ḳass* 'bone'; Proto-West Chadic **ḳas-* ~ **ḳyas-* 'bone'; Proto-Central Chadic **kVs-k-* 'bone'; East Chadic **kVs-* 'bone'; Proto-Low East Cushitic **ḳas-* 'bone, leg'; Proto-Warazi (Dullay) **mi-ḳeč-* 'bone' (?); Proto-Omotic **ḳus-* 'bone' D999 **ḳ'oč̣*'bone'
11	BREAST	*mnḏ*	ⲙⲛⲟⲧ [mnot] (B)	V117- Actually means 'chest' T2.260 – Afroasiatic **m-n* 'chest'; South Cushitic: Burunge *mūna* 'chest'; Central Chadic: Tera *méməna* 'chest'. OS1815 links to *mVlg-* 'suckle
			ⲉⲕⲓⲃⲉ [ekibe], ⲕⲓⲃⲉ [kibe] (S), ⲕⲓϥⲓ [kifi] (B), ⲕⲓⲃⲓ [kibi] (F)	V40 Actually means 'chest' < *ḳ3b.t* (Middle Egyptian – 2100-1700 BCE) –Aberrant Bohairic form ⲕⲓϥⲓ and Sahidic alternative form ⲕⲓⲃⲉ, as well as V163 ⲡⲉⲣⲕⲓⲃⲉ 'house of the chest' (rib cage) No immediately obvious Afroasiatic cognates.
			ⲕⲁⲗⲁϩⲏ [kalahē] (SFL)	V80 – Compound with ϩⲏ 'belly' – cf. 11 BELLY
12	BURN (tr.)	*nbj*	ⲗⲱⲃϣ [lōbš] (SL), ⲗⲟⲃϣ [lobš] (B)?	V95 - ⲗⲱⲃⲥ (SL), ⲗⲱⲃⲥ (B)V95 'be hot, burn' (intransitive) < *3bḫ* < *lbḫ* ' to burn' (Sarcophagus texts), while in his Database, Militarev derives these Coptic forms from *nbj* (E II.244) Proto-Semitic **lhb* 'flame'; Proto-Central Chadic **lVḅ-* 'ash', Logone *ləḅə́*; Beḍauye (Beja) *luw* <**lub-* 'burn'; Proto-Warazi (Dullay) **lub-* 'burn';
		nśr		*nśr* 'to burn' – Pyramid texts, present in late Egyptian but not attested in Coptic (EII.335) No immediately obvious Afroasiatic cognates.
		ḳrr	ϭⲗⲓⲗ [clil] (B), ⲕⲣⲱⲙ [krwm] (S)	*ḳrr* 'to burn' – Pyramid texts, present in late Egyptian, attested in Coptic as ϭⲗⲓⲗ (B) 'burnt offering' (E V.61) and as ⲕⲣⲱⲙ (S), etc. cf. 28 FIRE. Probably related to OS1584 **ḳol-* 'be hot, burn'; Semitic **ḳVlVw-* 'roast', Akkadian *qalû*, Arabic *qlw*; Proto-Central Chadic **kwalu-* 'hotness', Bachama *kwul-*
			ⲙⲟⲩϩ [muh] (SB), ⲙⲟϩ [moh] (B)	V131 'burn' (intransitive) < *m3ẖ* 'to burn' (Middle Egyptian – 2100-1700 BCE). Also note transitive forms in V216: ⲧⲙϩⲟ [tmho] (S), ⲧⲉⲙϩⲟ [temho] (B), ⲧⲙϩⲉ- [tmhe-] (SB) < *dy.t m3ẖ-ā* 'cause to burn' T3.95 – T says etymology remains controversial but that West Chadic: Proto-Angas **mʷalak* > *mulk* 'blister caused by burning' is possible.
		rkḥ	ⲣⲱⲕϩ [rōkh] (SB), ⲣⲉⲕϩ [rekh] (SB), ⲣⲟⲕϩ [rokh] (SB)	V172 'burn' (intransitive) < *rkḥ* 'to burn' (Pyramid texts), also transitive verb from same source. No immediately obvious Afroasiatic cognates.
			ⲥⲱϣⲙ [sōšm] (S)	V203 'be hot, burn' (intransitive), also 'be angry' < *ššm* 'to be in flames' (Medical papyri) Linked by Militarev to Proto-Afro-Asiatic **ŝam-* 'sun' Proto-Semitic **ŝam(ŝam)* 'sun', 'sun-heat', Akkadian *šamšu* 'sun', Hebrew *šemeš* 'sun', Arabic *šams-* 'sun', Soqotri *šam*; Proto-Berber **sam-* 'lightning', Ahaggar (Tahaggart) *e-ssam*, Figig *i-ssim*; Proto-WChadic **[ŝ]Vm-* 'sun'
		3šr	ⲱⲣϣ [ōrš] (S)	V251 'burn, roast, dry' < *3šr* 'to roast' (Pyramid texts), Proto-Afro-Asiatic **ĉur-* 'keep in the sun'; Proto-Semitic **ŝur-* 'make warm'; Arabic *šrr* [-u-]
		tk3	ⲧⲓⲕ [tik], ⲧⲱϭ [tōc] (S), ⲑⲱⲕ [tʰōk], ⲑⲟϫⲓ [tʰoǯi] (B)	Coptic forms 'spark' < *tk3* (Theban royal graves) 'spark, burn' Proto-Afro-Asiatic **tukaʔ-* 'burn; ash'; Proto-West Chadic **tuʔVk-/*tVkk-*, 'cold ash','put on fire' ; Hausa *tȍkǟ* 'cold ash', Pero *tókkò* 'put on fire'; cf. Central

				Chadic Musgu *mutukúi* 'white, yellow' < **mu-tuk-* 'ash-colour'?; Proto-Central Chadic **tak*^{w}*-r* 'burn'; Mafa=Matakam *tákwá-r*, Proto-East Chadic **tVk-n-* 'stove', Dangla *tuki-nà*, Bidiya *tokí-nà*
			ϫⲉⲣⲟ [ʒero] (S), ϭⲉⲣⲟ [cero] (B), ϫⲉⲣⲉ [ʒere] (S), ϫⲉⲣⲟ [ʒero] (S)	V331 'light up, burn' < Demotic *ṯr*, *ṯ3y-r3* 'to light up', probably from **dy.t ẖ.t r* (Černy) 'set fire to'. According to Černy, Ptolemaic era forms *ḏ3r* 'cook', *ḏr* 'fire' are related. OS2642 Central Chadic *ǯar* 'boil'; East Chadic *'aǯVr* 'boil'.
			ϫⲟⲩϥ [ʒuf] (SB), ϫⲱϥ [ʒōf] (SB), ϫⲟϥ [ʒof] (B)	V333 1. 'burn' (intransitive), 2. 'be acidic, bitter, strong' < *ḏ3f* 'to burn' (transitive verb) (New Kingdom) Proto-Afro-Asiatic **çVrVf-* 'burn'; Proto-Semitic **ṣVrVp-* 'burn', Akkadian *ṣarāpu*, West Chadic Tala *sirvi (< *SVrf-)* 'ash'
13	CLAW, NAIL	*ʿnt*		V64 Erman has *ʿnt* surviving into Coptic as 'thumbnail, thumb' eine [eine] (S), ini [ini] (B) - (E188) – Proto-Afro-Asiatic **ʕVn- ~ *nVʕw(-an)-* 'finger, fingernail'; Semitic **naʕw-* 'fissure on the hoof'; Western Proto-West Chadic **niwan-* 'nail', Boghom *nyúun*, *nyóón*, *nywon*, Kir *nyoŋ-ol*; Proto-Agaw **naHan-* 'hand', 'finger', Bilin *naŋ* 'hand', Khamir *nän* 'hand', Khamta *naan* 'hand', Qwara *naan*, *naana* 'hand', 'finger', Qemant *naan* 'finger'. D736: cognate with IE $H^w nog^h$
			ⲉⲓⲉⲓⲃ [eieib], ⲉⲓⲃ [eib] (S), ⲓⲉⲃ [ieb], ⲓⲏⲃ [iēb] (B)	V61 ⲉⲓⲃ (S), ⲓⲉⲃ (B) < late Egyptian *3b* 'nail' – poss. link to Pyramid text (27 BCE) to Pyramid text (27 BCE) *y3f.t* 'claw of bird of prey. But note also ⲉⲓϥⲧ (S), ⲓϥⲧ (B) < *ʿfd* 'nail (New Egyptian) (1600-1100 BCE) Proto-Afro-Asiatic **liʔi/af-*; Proto-Central Chadic **lilif-* 'fingernail', Banana *lilifa*; Bedauye *neʔaaf* 'fingernail, claw'; Proto-Saho-Afar **lifiʕ-* 'fingernail, claw'; Saho *lifiʕ*
14	CLOUD	*ʿigp*	ϭⲓⲡⲉ [cipe] (S), ϭⲏⲡⲓ [cēpi] (B)	V345 *ʿigp* 'rain cloud' – Poss. link to Proto-West Chadic **kwabVH-*, and to D1106 *ḳ'apa* 'cover'
		ḳrr	ⲕⲗⲟⲟⲗⲉ [kloole] (S)	V77 < *ḳrr* 'cloud' – already in Pyramid texts, also West Chadic *ḳariy* 'cloud'
15	COLD	*ḳbb*	ⲕⲃⲁ [kba], ⲕⲃⲟ [kbo] (S), ⲭⲃⲟⲃ [k^{h}bob] (B)	V71 'to cool, be fresh' < *ḳbb* 'be fresh, cool' (in Pyramid texts) Proto-Afro-Asiatic **ḳab-* 'cold'; Proto-Low East Cushitic **ḳab-* 'cold', Somali *qabow*, Oromo (Galla) *qabbanā*^{w}*ā*, Rendille *cobo*, Baiso *ambál* (<**ḳamb-al*), Arbore *ḳab-*, Elmolo *-apanute* (<**ḳab-*)
			ⲱⲣϣ [ōrš] (S), ⲁⲣⲟϣ [aroš] (S), ϩⲣⲟϣ [hroš] (B)	V251 'be fresh, cold, feel cold' < *ỉrš* (Demotic) No immediately obvious Afroasiatic cognates.
			ϩⲱϫ [hōʒ] (B)	V320 'cold' < *ḥḏy* 'the cold' (Demotic) Possible link to *ḥs* 'cold'(Middle Kingdom), in which case linked to Proto-Afro-Asiatic **ḥVwas-* 'cold'; Proto-Central Chadic **xVs-* 'coldness', Gaanda *həs*, Gabin *xəs*; Proto-East Chadic **Hwas-* 'cold', 'cold wind', Dangla *ùsù* 'cold wind', Migama *ʔússú* 'cold wind', Jegu *ʔés* 'cold wind', Sokoro *ósso* 'cold', 'cold wind'
16	COME	*ii*, *yy*	ⲉⲓ [ei] (S), ⲓⲓ [ii] (B) ⲛⲏⲩ [nēw] (S), ⲛⲏⲟⲩ [nēw] (B)	V58 < *ii* or *yy* 'to come', V has *iw* 'come' as a separate verb, Militarev considers it as part of the same verb. V138 ⲛⲏⲩ (S), ⲛⲏⲟⲩ (B) derive from qualitative forms 'in the process of coming'. Proto-Afro-Asiatic **yaʔ/w-* 'go, come, run'; Proto-Berber **yV-* 'come', Izayan *iya*, Qabyle (Ayt Mangellat) *əyya*

				(imper.) 'come'; Proto-West Chadic **yaw-* 'go', 'come', 'run' 'run', 'wander through', Hausa *yā̃wà* 'wander through', Gerke=Yiwom *ya* 'go', Dera=Kanakuru *yài* 'come', Kifri=Giwo *yew/ʔ-* 'go', Boghom *yuwey* 'run', Daffo-Butura *yû* 'go', Ngizim *yá* 'go'; Proto-Central Chadic **ya-* 'come', Daba *ya*, Musgoy *yā* , *ya*, Masa *ya*; Proto-East Chadic **ya-* 'go', Tumak *yè*, Lele *è*, Tobanga (=Gabri Nord) *yə̀*; Bedauye *yi-*, *ʔi-* 'come'; Proto-Low East Cushitic **yaʔ-* ~ **ʔiʔ-t-* 'run away' 'go', 'go' 'come', Somali *yaaʔ-*, Arbore *ʔiʔit-* ; Proto-Omotic **yaʔ-* 'come' 'go', 'run away' 'come', Ometo *ya-* 'go', West Mao (Hozo) *yɛi* 'come', West Mao (Sezo) *yɛ* 'come'
17	DIE	*mwt*	ⲙⲟⲩ [mu] (SBALF)	V107 < *mwt* (Pyramid texts) Proto-Afro-Asiatic **mawVt-* 'die'; Proto-Semitic **mw/yt 'die'*; Proto-Berber **immut* 'die', Nefusa *əmmət*, Ghat *əmmət*, Ahaggar (Tahaggart) *əmmət*, Taneslemt *əmmət*, Zenaga *emmʷi*, Semlal *əmmət*, Izayan *emmet*, Mzab *əmmət*, Wargla *əmmət*, Qabyle (Ayt Mangellat) *emmet*, *əmmət*; Proto-West Chadic **mawut-* 'die', Hausa *mútù*, Mupun *mùut*, Sura *mùut*, Angas *mùut*, Chip *mùut*, Montol *mùut*, Ankwe=Goemai mūd, Gerke=Yiwom mūd, Bolewa *mot-*, Karekare mēt- , Dera=Kanakuru *múrì*, Tangale *mụde*, Pero *mur-*, Ngamo *mat-*, Maha *muto*, Bele *mótú-*, Kifri=Giwo *múk-kò*, Gera *múdù-*, Galambu *mə́z-*, Geruma *mút-*, Warji *miy-*, Kariya *miya*, Diri *matu*, Miya *miy-*, Pa'a *miy-*, Cagu *mōs-em*, Jimbin *mul*, Polchi *misì*, Geji *muš*, Zaar *miši*, Burma *misè*, Sayanchi *mìši*, Boghom *mas*, Guruntum *mis*, Dwot mus, Buli masši, Kir muse, Tule *mə̀šì*, Fyer mot, Bokos *mot*, Sha *môt*, Kulere *mot*, Daffo-Butura *mot*, Ngizim *mə́tə*, Bade *mútù*; Proto-Central Chadic **mVtV-* 'die', Tera *mətá*, Bura *ḿtà*, Chibak *nti*, Margi ḿ*tù*, Higi Nkafa *mtɛ*, Higi Ghye *mtɛ*, Fali Gili *mti*, Kapsiki=Higi Kamale *mtɛ*, Dghwede=Zəɣwana *mcáyà*, Mandara=Wandala *mca*, Mofu-Gudur *-màč-*, Gisiga *moc*, Nzangi *mute*, Logone *mti*, Buduma=Yedina *matté*, Musgu *mára*, *miri <*mVt-*, Lame *mátá*, Zime-Batna *mát*, Masa mítná; Proto-East Chadic **mawut-* 'die', 'death' Somrai *mār* 'die', Tumak *ma* 'die', *māde* 'death', Lele *ma* 'die', Kabalai *muwə̀* 'die', Tobanga (=Gabri Nord) *mare* 'die', Kera *mé* 'die', Kwang *māyé* 'die', Dangla *màtè*, Migama *mā̃tó* 'die', Jegu *maat* 'die', Mubi *māt* 'die', Birgit *mā̃tí* 'die', Mokilko *ʔìnd- <*ʔimt* Sokoro mṻita; Proto-Low East Cushitic **mūt-* < **mVwVt-* 'die', 'death', 'become very weak and close to death', 'mourning', Somali *mōd/t* 'death' Oromo (Galla) *a-mutaa* 'mourning', Rendille *-mut* 'die', Gidole (Dirasha) *muut-* 'become very weak and close to death'. T1.227 Semitic **mwt* 'to die'; Berber **mwt*; Lower East Cushitic **mut-* 'to die'; Proto-Chadic **m-w-t* 'to die' OS1751 – Extensive cognates in Semitic, Berber, W/E/C Chadic, Lower East Cushitic.
			ⲡⲱⲗϫ [pōlʒ]	V159 – 'separate' – Presumably cognate with Afroasiatic *purVs-*, albeit latter with meaning of 'separate, cut'. Other figurative expressions V125 ⲙⲧⲟⲛ (SB) 'to relax'.
18	DOG	*ʿi3w*		*ʿi3w* not attested in Coptic but cognate with Cushitic *yayy* 'wild dog, hunting dog'; Proto-Afro-Asiatic **ʔayVw-* ʽjackal, dog'; Semitic *ʔVwVy- 'jackal'; Proto-West Chadic **ʔiy-* 'dog', Warji *íyà-nà*, Kariya *íí*, Miya *í*; Proto-Low East Cushitic **yayy-* 'wild dog', Somali *yéèy* 'wild dog', Oromo (Galla) *yeeyii* 'wolf' 'wild dog' (Amh *yäyi*

				'hyena'); cf. *iyyaa* 'k. of wild cat', Boni *yeyeʔ* 'jackal', Rendille *yááy* 'wild dog', Konso *yoy-ta* 'hunting dog'; Proto-High East Cushitic **yayy-* 'hunting dog', Sidamo *iyäy*, Hadiya (Gudella) *yoyy-akko.* Burji (Bambala, Dashe) *yeyy-ée*
			ⲟⲩϩⲟⲣ [uhor] (S, B), ⲟⲩϩⲱⲣⲉ [uhore] (S)	V242 Cognate with Berber *whr* 'fox' – late word and possible borrowing. T1.144 But also in Konso *oray-ta* 'hyena' and South Cushitic Ma'a *ware* 'hyena' (borrowed from E Cushitic, according to Ehret).
			ϭⲁⲗⲟⲡⲟⲩ [calopu], ⲕⲁⲗⲟⲡⲟⲩ [kalopu] (S), ϭⲁⲗⲁⲡ [calap] (F)	V338 ϭⲁⲗⲟⲡⲟⲩ, ⲕⲁⲗⲟⲡⲟⲩ (S), ϭⲁⲗⲁⲡ (F) 'small dog' – borrowing from Semitic *kalb*
19	DRINK	*zwr*	ⲥⲱ [sō] (SB), ⲥⲉ- [se-] (SB), ⲥⲟⲟ- [soo-] (S), ⲥⲟ- [so-] (B)	V183 < *zwr* (Pyramid texts) T1.311 – widespread view that cognate with Berber **swy*, Chadic **s-w-[y/h].* T instead thinks it may be related to West Chadic: Hausa *zúrààráá* 'pour, drop' or Central Chadic Mofu *zədr*; East Chadic: Somray *dara* 'pour'.
		snk	ⲥⲱⲛⲕ [sōnk] (SB), also ⲥⲱⲙⲕ [sōmk], ⲥⲱⲙⲅ [sōmg] (S)	V191 'suck, drink' < *snk* 'to breast feed' (Pyramid texts) Proto-Afro-Asiatic **ni/uḳ-* 'suck'; Proto-Semitic **ynḳ* 'suck', Akkadian *enēḳu (i/i)*, Ugaritic *ynk*, Hebrew *yānaḳ*, Arabic *nḳw/y* 'remove marrow from a bone'; Proto West Chadic **nVḳ-* 'lick', Warji *nəḳə*, Kariya *nəkə*; Proto Central Chadic **nik-* 'lick', Mbara *ník*, Daba *nə̂kāt*; Dahalo (Sanye) *nuuḳ-* 'suck beer through a straw';
20	DRY	*śšw*	ϣⲟⲟⲩⲉ [šoue] (S), ϣⲁ(ⲟ)ⲩⲉ [ša(o)ue] (S), ϣⲁⲩⲉⲓⲉ [šaueie] (A), ϣⲱⲟⲩⲓ [šwui] (B), ϣⲁⲩⲉⲓ [šauei] (F), ϣⲟⲩⲱⲟⲩ [šuōu] (SAAB)	Proto-Afro-Asiatic **s/ŝVw/yaH-* 'be dry'; Proto West Chadic **syaH-* 'become dry', Bolewa *sáa-*, Karekare *sáa-*, Ngamo *sa-*, Gera *sẽe-*; Proto-Central Chadic **swaHi-* 'become dry', Zime-Batna *soia*; Proto-East Chadic **sVw-* 'dry up'; Omotic: Kafa *šuʔō <*ĉ/ŝVʔʷ*; Janjero *iččimi, išimi <*ʔʷič/š-im-*; Dime *wučum <*ʔʷVĉ-*; Hamer-Banna *wâčči, woč-*
21	EAR	*ʿidn*		Not attested in Coptic – Proto-Afro-Asiatic **ʔi/užn- ~ ʔi/udn-*; Proto-Semitic **ʔud_(V)n-* 'ear'; Proto-East Chadic **ʔudu/in-* 'ear', Dangla *ḍe_ŋgei*, Jegu *ʔúdúŋê*, Birgit *ʔúdúŋì*, Proto-Agaw **waǯ-* 'hear', Bilin *was*, Khamir *waz/ǯ*, Khamta *waš*; Proto-Omotic **waǯ-*, 'ear', 'hear', Ometo: Male *woyzi* 'ear', *wayz* 'hear', Chara *wáása* 'ear'
		msḏr	ⲙⲁⲁϫⲉ [maaʒe] (S), ⲙⲁϣϫ [mašʒ] (B), ⲙⲉϫ [meʒ] (F), ⲙⲁϣⲧⲁ [mašta] (P), ⲙⲉϣⲧ [mešt] (S)	V132 'ear' < *msḏr* (Pyramid texts) Link to D1352 *ma-* (Nominalising affix)? – citing Hausa *maǯiyī* < ǯī 'hear' D2133 **sVṭîmV* 'to hear'?
22	EARTH	*tꜣ*	ⲧⲟ [to] (S), ⲑⲟ [tʰo] (B)	V209 ⲧⲟ (S), ⲑⲟ (B) 'land, earth'. Proto-Afro-Asiatic **tVʔ-* 'kind of soil'; Proto-Central Chadic **tiy-/*tiw-* 'sand', Mwulyen *tèó*, Bachama *tíyè*; Proto-East Chadic **tiy-/*tiw* 'ground', 'kaolin', Lele *tēy* 'ground', Kera *tííwə̀* 'kaolin'; Proto-Low East Cushitic **taʔ-* 'fertile soil', Oromo (Galla) *taaʔoo.*
		ḳḥ	ⲕⲁϩ [kah] (S, A, L), ⲕⲁϩⲓ [kahi] (B), ⲕⲉϩⲓ [kehi] (F)	V91 Attested since Middle Kingdom (2100-1700 BCE) – also related to *ḳ3ḥ.t* 'potter's clay' – hence semantic evolution in the sense of clay, earth > district, land. Cognate with Proto-Central Chadic **kaʔi-kaʔi-* 'sand'.
		ʿitn	ⲉⲓⲧⲛ [eitn] (S), ⲓⲧⲉⲛ [iten] (B)	V68 *ʿitn* attested since 18th Dyn. (1600-1300 CE) > eitn (S), iten (B) 'earth, dust, ground'; Proto-Afro-Asiatic **tawin-* (?) 'earth, dirt'; Proto-Semitic

				**ṭīn-* 'clay, earth, dirt', Syrian Aramaic *ṭīn-*, Arabic *ṭīn-*, Mehri *ṭayn*, Jibbali *ṭun*, Harsusi *ṭayn*; Proto-Central Chadic **tVn-* 'earth', Logone *tən*, Omotic Ongota *tauni* 'ashes'
23	EAT	*wnm*	ⲟⲩⲱⲙ [wōm] (S), ⲟⲩⲉⲙ- [wem-] (S), ⲟⲩⲟⲙ [wom] (S)	V232 *wnm* (Pyramid texts) > Demotic *wm* Proto-Afro-Asiatic **wVlVm-* 'eat; food'; Proto-Semitic **wVlVm-* 'give a meal, feed', 'prepare a meal', Arabic *wlm* 'feed', Mehri *awōlem* 'prepare meal', Harsusi *awlōm* 'prepare meal'; Proto-East Chadic **wVlVm-* 'food', Kabalai *uelema*
			ⲙⲉϩ-ⲣⲱ [meh-rō] (S), ⲙⲁϩ-ⲣⲱ [mah-rō] (B); ⲙⲉϩ-ϩⲏⲧ [meh-hēt] (S), ⲙⲁϩ-ϧⲏⲧ [mah-χēt] (B)	V130-131 Compounds ⲙⲉϩ-ⲣⲱ (S), ⲙⲁϩ-ⲣⲱ (B) 'fill the mouth' < *mḥ r3*, ⲙⲉϩ-ϩⲏⲧ (S), ⲙⲁϩ-ϧⲏⲧ (B) 'fill the belly' < *mḥ ẖ.t*
24	EGG	*swḥ.t*	ⲥⲟⲟⲩϩⲉ [souhe] (S), ⲥⲱⲟⲩϩⲓ [sōuhi] (B)	V202 'egg' < *swḥ.t* 'egg' (Pyramid texts) Proto-Afro-Asiatic **sawVḥ-* (?) 'egg'; Proto-West Chadic **saHʷ-* (>ṣaw-)/ **Hʷas-* 'egg', Mupun *ā̆s*, Sura ā̆s, Angas *es*, Ankwe=Goemai *hās*, Bolewa *ḍ-inšha*, Karekare *ʔínsà*, Pero *íǯî*, Ngamo *yínsâ*, Kifri=Giwo *íččà*, Gera *ísà*, Galambu *ī̆sà*, Geruma *nitsha*, Warji *cù-ná*, Kariya *ṣū*, Miya *ácù*, Pa'a *àsí*, Cagu *sóhòyí*, Siri *ṣàwɨ́*, Mburku *ç̌ǘ*, Jimbin *ášú*, Jimi *yṓsō*, Mangas *wənsi*, Boghom *ny-onsiʔ*, Kir *wansì*; Proto-Central Chadic **saHVy- > *ŝV(ŝV)* 'egg', Higi Nkafa *ŝiŝi* (pl.), Lamang *ŝiŝi*, Dghwede=Zəɣwana *ŝəŝè*, Mandara=Wandala *šéya <*say/H*, Guduf *ŝíɛ̀*, Mofu-Gudur *ŝɛŝɛ-ḍ*, Gisiga *teĉ<tV-ĉayH*, fem. pref. cf. Mukt *ŝaŝáì*, Buduma=Yedina *n-ŝee*, Musgu *axê*, Peve *šae*, Zime-Dari *séʔ*, Masa *se*, Proto-East Chadic **His- (> ʔis-)* 'egg', Tumak *ŋàá*, Ndam *nās*, Dangla *ḍîìsà*, Migama *ḍéèsè*, Jegu *ḍḕš/sê*, Bidiya *ḍíisà*, Mubi *ḍíssó*, Birgit *ʔíisìyà*
25	EYE	*'irt*	ⲉⲓⲁ [eia] (S)	V60, V66 - Coptic forms survive as ⲓⲉⲓⲣⲉ [ieire], albeit only in compounds such as ⲉⲓⲉⲣⲃⲟⲟⲛⲉ [eierboone] (S), ⲓⲉⲣⲃⲟⲛⲓ [ierboni] (B) 'evil eye' and the isolated form ⲉⲓⲁ (S). Proto-Afro-Asiatic **ʔir-* 'eye'; e.g. Semitic *ra3ā* 'to see'; Proto-West Chadic **yir-* (<**ʔir-*) 'eye', Jimi ***yára***, Polchi *yir*, Geji *gʷ-er*, Zaar *yīr*, Sayanchi *yíir*, Guruntum *yer-en*, Buli *irr*, Kir *yìr*, Wangday *yìr*, Tala *yìr*, Zul *ge-erē*, Fyer *yèèr*, Kulere *rî(h)*, Daffo-Butura *d-iir*, Proto-Central Chadic **ʔiray-* 'eye', Mbara *rḗ* (pl.), Malgwa *ire*, Gisiga *re*, Munjuk *aray*, Daba *xìrā*, *ra*, Musgoy *ríyā*, Musgu *arai*, Gidar *ạrạ*, Lame *írí*, Peve *i*, Zime-Batna *ʔír*, Masa *írạ*, Mesme *ir*, Banana *irà* , *ida*; Proto-East Chadic **ʔEr-* 'eye', Mubi *ír-ín* , pl. *ar-an*, Mokilko *ʔêr-sá*; Beḍauye (Beja) *iray* 'see'; Proto-South Cushitic **ʔar-* 'to see', Iraqw (Mbulu) *ara*, Alagwa (Wasi) *ar-*, Burunge (Mbulungi) *ar-im-*. D27 **ʔïlV* 'eye' – cf. 72 SEE
			ⲃⲁⲗ [bal] (S, B), ⲃⲉⲗ [bel] (ALFO)	V27 < *br-wy* 'both eyes'. *br* for 'to see' only attested in Ptolemaic period (323-30 BCE) – possible relationship to Berber *will* 'eye' (D2481) or to Proto-Semitic **bVrVy-* 'see, examine' (EHU-Militarev) > Akkadian *baru*, Arabic *bry*, cf. also D200 'blind' – as possible cpd. with '*br*' – eye.
		'n, 'jn		'eye' – no survival into Coptic Proto-Afro-Asiatic **ʕayVn-* 'eye'; Semitic **ʕayn-* 'eye' – very extensive; Proto-West Chadic **ʔayVn-* 'to see', Bolewa *ʔinn-*, Pa'a *ḥan*, Polchi *yeni*, Geji *yenî*, Tule *yāni*, Fyer *yaána*, Kulere *ṛiyan* (= Hiyan?), Daffo-Butura *yen*, East Chadic cf. Jegu *ʔinn-* 'to know'; Proto-Saho-Afar

				*Hin-t- ‘eyes’ (pl.), Saho _intit_, Afar (Danakil) _intit_, Proto-Omotic _*Han-_ ‘eye’, Gimirra (Benesho, She) _an_ NB Denominative verbs in Brb _*HVnVy_ ‘see’ (Ghat Ahaggar _əni_, Ayr _ənəy_, Adghaq _ənhi_, Izd _inni_); West Chadic _*ʕVyan-_ ‘see’ (Bole _ʔinn_, Pa’a _ḥan_, Kulere _riyan_, Daffo-Butura _yen_) and Central Chadic _*ʔan-_ ‘see, find’ (Ga’anda _ànnì_ and Dahalo _ʕeen-aad__ ‘see from afar’?
26	FAT (noun)		ⲕⲛⲛⲉ [knne] (S), ⲕⲉⲛⲓ [keni] (B)	V83 Evidently derived from Old Egyptian _ḳny_ ‘be fat’ Proto-Afro-Asiatic _*gVnVʔ-_ ‘interior, stomach, heart’; Semitic _*ga/in(a)n-_ ‘interior; heart’ Proto-Semitic _*ga/in(a)n-_ ‘interior, heart’, Akkadian _gannu ‘part of the body of an animal’, ‘internal body part of sheep’_, Ugaritic _gngn, ggn, gngnt_ ‘interior, heart’, Hebrew Cf. _gāḥōn_ ‘belly (of snakes and reptiles)’, Arabic _ǧanān- ‘heart, spirit, soul’, ǧīn- ‘interior (of everything), heart (poetic)’_ [ibid.]; _ǧanīn-_ ‘_embryo_’; Central Chadic _*ʔa-gwin-_ ~ _*ginuʔ-_ ‘intestines’, ‘stomach’, Fali Kiria _gìnuʔ_ ‘intestines’, Gude _ʔàgínə_ ‘intestines’, Logone _ŋgùn_ ‘stomach’, Buduma=Yedina _ŋun_ ‘stomach’, Gulfey _um-guén_ ‘stomach’, Kusseri _nguén_ ‘stomach’; East Chadic _*gVgVn-_ ‘stomach’, Tumak _gègə̄n_; Beḍauye (Beja) _*ginʔa_ ‘heart’; South Cushitic _*gunuʕ-_ ‘navel’, Iraqw (Mbulu) _gunuʕa_
		_ꜥḏ_	ⲱⲧ [ōt] (SB)	V251 < Old Egyptian _ꜥḏ_ ‘fat’ (Demotic _ꜥt_ ‘fat’) D118 _*ʕæʹyaǯV_ ‘fat’, linked to Semitic _ʕgr_, Arabic _ʕǧr_ ‘fat, obese’
27	FEATHER	_šw-t_		Link to Proto-West Chadic: _*saw-_, no survival into Coptic
			ⲙⲏϩⲉ [mēhe] (S), ⲙⲉϩⲓ [mehi] (B)	V130 < _mḥ.t_ ‘feather’ since 18th Dyn. (1600-1300 BCE) T3.481 says no clear etymology but possibly derives from _ḥwj_ ‘beat wings, feathers’. No immediately obvious Afroasiatic cognates.
28	FIRE		ⲕⲱϩⲧ [kōht] (SALF)	V92 derives Coptic form from _ḳ3hd_ ‘to smoke (of a fire)’. Presumably linked to Proto-Afro-Asiatic _*kaw/y/ʔ-_ ~ _*ʔ/yak_^{w}_-_ ‘set fire’; Proto-Semitic _*kVwVy-_ ‘burn’, ‘kindle fire’, Akkadian _kawû_ ‘burn’, Hebrew _kwy_ ‘burn’, Arabic _kwy [-i-]_ ‘kindle fire’; Proto-West Chadic _*kaʔ-_ ‘burn’, Kifri=Giwo _kaʔʔ-_, cf. also Tangale _kawɛ_,Warji, Kariya _kàw_, Miya, Jimbin _kaw-_, Pa’a _kù_, Cagu _kuwa_, Siri _kúú_, Ngizim _kàuyú_ ‘fry’; Proto-Central Chadic _*kuw/y-_ ‘hot(ness)’, ‘fire’, ‘burn’, ‘fry’, Munjuk _kuye_ ‘burn’, Sukur _khũ_ ‘hot(ness)’, Daba _kwuh_ ‘fire’, Musgoy _kū_ ‘fire’, Buduma=Yedina) _káwái_ ‘fry’, Lame _kókú_ ‘hot(ness)’, Zime-Batna _kú_ ‘fire’, Masa _ku_ ‘fire’, Banana _kuwà_ ‘hot(ness)’; Proto-East Chadic _*kawVy-_ ‘fire’, ‘fry’, ‘burn’, ‘stove’, Lele _kūy_ ‘fry’, Kabalai _kùyə́_ ‘stove’, Kera _kí_ ‘burn’, Kwang kāwú ‘stove’, Mobu (dial. Kwang) _káw_ ‘stove’, Mubi _kèwī̀_ ‘fire’; Proto-South Cushitic _*ʔ/yak_^{w}_-_ ‘firestone’, Iraqw (Mbulu) _akw-esi_ ‘firestone’, Asa-Aramanic _yogo-t_ ‘firestone’, Mogogodo (Yaaku) _ikú_ ‘fire’.
			ⲕⲣⲱⲙ [krōm] (S), ⲭⲣⲱⲙ [k^{h}rōm] (B), ⲭⲗⲱⲙ [k^{h}lōm] (F)	V86 - 19th Dyn. (13 BCE) _ḳrmt_ ‘of burnt tents’, presumably from _ḳrr_ ‘to burn’ already in the Pyramid texts. D1041. Cf. 5 ASHES, 12 BURN
		_sḏ.t_	ⲥⲁⲧⲉ [sate] (SA), ⲥⲁⲁ [saa] (S), ⲥⲟ [so] (S), ⲥⲉⲉ [see] (A),	V197 Coptic forms survive as ⲥⲁⲧⲉ (SA), ⲥⲁⲁ (S), ⲥⲟ (S), ⲥⲉⲉ (A), ⲥⲁϯ (B, F) ‘fire’ < Pyramid text _sḏ.t_ ‘fire, flame’. No immediately obvious Afroasiatic cognates.

			ⲥⲁϯ [sat] (B, F)	
		3ḫt		Not attested in Coptic Proto-Afro-Asiatic _*ʔaḫ-_ ~ _*ḫaʔ-_ 'fire'; Proto-Central Chadic _*ḫwV-_ 'fire', Higi Futu *ɣwɨ*, Higi Baza *uɣù*, Higi Nkafa *ɣwì*, Higi Ghye *(u)xwɨ*, Fali Kiria *ùɣû*, Fali Gili *ɣo*, Kapsiki=Higi Kamale *ɣwì*; Proto-South Cushitic _*ḫaʔ-_ 'fire', Qwadza (Ngomvia) *ḫaʔo*; Proto-Omotic _*ʔoḫ-on-_ 'fire', Ongota *ʔoḫona*
		ḏr		Proto-Afro-Asiatic _*gir-_ 'fire'; Proto-Semitic _*gir-_ 'fire, deity of fire', Akkadian *giru*, *girru*, Arabic *ʔǯr* 'make/burn bricks', Gurage _*mag'ara_ 'burn'; Proto-West Chadic _*girgir-_ 'hot', Dera=Kanakuru´*gə́rgə̀t*, Maha *girgir*, Proto-Central Chadic _*gVrgVr-_ 'hotness', Tera *gɨr gɨr*, Bura *gɨrgɨr*, Proto-Saho-Afar _*gir-_ 'fire', Saho *gira*, Afar (Danakil) *giraa*; Proto-High East Cushitic _*gir-_, 'fire', 'burn', Sidamo *giira* 'fire', *giir-* 'burn', Darasa (Gedeo) *giira* 'fire', Hadiya (Gudella) *giira* 'fire', *giir-* 'burn', Kambatta *gii-ra* 'fire'; Proto-South Cushitic _*giʔiR-_ 'embers', Iraqw (Mbulu) *gilʔi*, Alagwa (Wasi) *giʔiru*, Burunge (Mbulungi) *giʔiru*
				hwt 'fire' (in Sarcophagus texts) Proto-Afro-Asiatic _*hVwat-_; Proto-West Chadic _*Hut-/*Hwat-_ 'fire', Hausa *wútã*, Dera=Kanakuru *wátì*, Jimi *wuɓo*, Geji *wútu´*, Mangas *wur*, *wut*, Zaar *wit*, Barawa *wut(u)*, Burma *wut*, Sayanchi *wut*, Boghom *wur*, Dwot *wũtū*, Buli *ũt*, Kir *wut*, Tule *wuti*, Wangday *wũra*, Tala *wudɨ*; Proto-Central Chadic _*xwat-_ 'fire', Tera *wə̀tì*, Gaanda *wə̀ta*, Gabin *wə̀te*, Boka *xwə̂tə*, Hwona *warā*
29	FISH	*rmw*	ⲣⲁⲙⲉ [rame] (S), ⲣⲁⲁⲙⲉ [raame] (S), ⲣⲁⲙⲓ [rami] (B)	V172, C294b, also in S as ⲣⲁⲁⲙⲉ 'Tilapia nilotica'. D1993 _*rVyamV_ links to general Afroasiatic terms for 'worm', 'insect', e.g. Proto-Semitic _*rimm-at-_, V links to roots for 'stream', 'flow'. Neither very convincing.
			ⲧⲃⲧ [tbt] (S), ⲧⲉⲃⲧ [tebt] (B)	V211 < *tb(t)-w* 'fish' – Attested since Ptolemaic period. V adds "Coptic forms may derive from a plural". Note Proto-West Chadic _*ṭab-_ > _*taḅ-_ and Proto-Central Chadic _*ta/um-_ in (EHU-Militarev) 'catch' in the sense of 'catch fish' – hence the semantic evolution from 'catch (of fish)' to 'fish' – D470 _*ĉ́aʔbV_ 'fish' as a Nostratic root, linked to Egyptian *ḏdb* – Yemsa (Omotic) *čop̣a* 'fish'
30	FLY (verb)	*p3y*, *p3w*		Root *parV* (D1758) – Not attested in Coptic, but still v. extensive in all branches of AA. Proto-Afro-Asiatic _*pVr-_ 'fly, soar'; Proto-Semitic _*pVrr_ 'fly', 'flee' Ugaritic *pr* 'fly', Aramaic *prr* 'fly', Arabic *frr* 'flee', Tigrai (Tigriñña) *frr* 'fly', Mehri *farr* 'fly', Harsusi *fer* 'fly', Soqotri *fer* 'fly'; Proto-Berber _*Hafir- ~ fVrfVr-_ 'fly', Nefusa *far*, Siwa *əm-fər*, Ahaggar (Tahaggart) *fərə-t*, Semlal *firri*, Seghrushen *afru*, Izdeg *afl_u*, Mzab *fərfər*, Wargla *afər*, Qabyle (Ayt Mangellat) *fferfer* 'beat wings, fly away, move fast'; Proto-West Chadic _*pir-_ 'soar into the air', 'stretch the wings', Hausa *fírà* 'soar into the air', Angas *piir* 'stretch the wings'; Proto-Central Chadic _*pi/ar-_, 'fly', 'fly away (bird)' 'stretch the wings', 'bird's flight', 'jump', Hwona *pəra* 1, Mafa=Matakam párr, pérr 'bird's flight', Gude *pər*, *fər* 'stretch the wings', Buduma=Yedina *fər* 'fly', 'jump', Lukas *fer* 'jump'; Beḍauye (Beja) *fir* 'fly'; Central Cushitic (Agaw) _*fir-_ 'fly'; Proto-Agaw _*fir-_ 'fly', Bilin *fir y-*'fly' T1.55
			ϩⲱⲗ [hōl] (SABF)	cf. 6 BIRD

31	FOOT		ⲡⲁⲧ [pat] (S), ⲫⲁⲧ [pʰet] (B)	V165 'foot, knee' < *p3d* (Medical texts) and *pd* (18th Dyn. – 1600-1300 BCE) 'knee' - also related to *pt* 'to run'. For Afroasiatic etymologies cf. 44 KNEE.
		rd	ⲣⲁⲧ [rat] (S), ⲣⲏⲧ [rēt] (S), ⲣⲉⲧ [ret], ⲣⲉⲉⲧ [reet] (S)	V178 'foot, leg' < *rd* (Pyramid texts) Proto-Afro-Asiatic **rad-* (?) 'foot, trace'; Low East Cushitic **rad-* 'footprint' Somali raad; Dahalo (Sanye) *rád_d_e* 'wing' (?)
			ⲟⲩⲉⲣⲏⲧⲉ [wernte] (S), ⲟⲩⲣⲓⲧⲉ [urite] (L), ⲟⲩⲣⲏⲧⲉ [urēte] (SAL), ⲟⲩⲣⲏϯ [urnt] (F)	V237 'foot, leg' < Middle Egyptian *w'r.t* 'leg' OS2506 West Chadic **war-*, Ankwe *war*, Central Chadic **wVr-* 'leg' Musgum *werē*
			ϭⲁⲗⲟϫ [caloȝ] (B), ϭⲁⲗⲁϫ [calaȝ] (F)	V340 'foot, knee' – cf. 44 KNEE
32	FULL	*mḥ*	ⲙⲉϩ [meh], ⲙⲁϩ [mah] (SB)	Cr209 'be full' Militarev has Proto-Afro-Asiatic **mag-* 'be numerous, be big'; Proto-Central Chadic **mVgw-* 'long', 'high', 'big', 'length', Munjuk *mogo* 'length', Musgu *mɔ́gwa* 'long', 'high', 'big'; East Chadic **mag-* '(be) many, much' , Tumak *māg*; Saho-Afar **mag-/*mang-* 'be strong', 'be numerous', 'fill', 'plenty'; Saho *meng-* 'be strong', *meg-* 'be numerous', Afar (Danakil) *mag-* 'be numerous', mangoo 'plenty'. D1443 **mañVga* 'strong, numerous' East Chadic **mig-*, **mug-* 'fullness'
33	GIVE	*rdy, rdd*	ϯ [ti] (S, B), ⲧⲁⲁ [taa] (S), ⲧⲏⲓ [tēi] (B)	V209 Militarev seems to believe that Coptic and Egyptian forms are of different origin, while V sees them as related through regular phonetic change. *rḏy* > *rdy* (Old Kingdom) > *dyy* (by Middle Kingdom – 1600-1100 BCE) – V cites Edel as stating that the depalatalisation of *ḏ* > *d* had already occurred by the Old Kingdom. Presumably related to *d, d(w)* 'give, place, put' which is a general Nostratic root, related to IE *dhe-* Is this related to general root for give, bring, which D reconstructs as **toH'ü*? E464 suggests that *rdy* may be related to *wdj* 'to lay, set' – evidence suggests that the *r-* and *w-* are prefixes [Curiously, parallel 'prefix' in Celtic, e.g. Welsh *rhoddi* (D2251)] T1.138 – Various roots cited: Semitic **rdd* 'render'; High Eastern Cushitic: Sidamo *led-*, *lad-* 'to add'.
		(3wt)	ⲁⲩ [aw], ⲁⲩⲉ [awe], ⲁⲩⲉⲓ [awei] (S), ⲁⲩⲓ-ⲥ [awi-s] (B)	V18 Coptic forms survive as ⲁⲩⲭ ⲁⲩⲉⲭ ⲁⲩⲉⲓ (S), ⲁⲩⲓ-ⲥ (B) 'give, bring, come (imperative)' prob. < Old Egyptian *3wt* 'offer, donate' and later sense *3wj* 'extend'. Possible etymology: D750 **ГoyV* 'carry, bring' – Berber *Hwy* > Ahaggar *awi* 'carry, bring', Beja *–hi(w)-* 'give', Agaw **ʔ3w* 'give', High East Cushitic **uw.*
34	GOOD	*nfr*	ⲛⲟⲩϥⲉ [nufe] (S), ⲛⲟⲩϥⲓ [nufi] (B)	V150 notes – "paradoxically, the Coptic form ⲛⲁϥⲣ [nafr] is more archaic than New Kingdom Egyptian 1600-1100 BCE". D1612 *ńäpVrV* 'tender, beautiful' – found extensively in Afroasiatic: Proto-Central Chadic **fi/ar-*, 'love' (v.), 'happiness', 'be happy', Mbara *fríí* ` 'love' (v.), Mulwi *fríyí* 'love' (v.), Munjuk *firiyi* 'happiness', Musgu *fára* 'be happy'; Proto-Saho-Afar **fer-* 'best', Saho *feer*, Proto-Berber **fVrVr-*, 'be good', Ahaggar (Tahaggart) *i-frar*, Proto-Agaw **fir-* 'best'.
			ⲛⲁⲛⲟⲩ [nanu] (SAF), ⲛⲁⲛⲉ [nane] (B)	V143 < *'ny* 'be beautiful, beautiful' "Since Middle Kingdom but probably older" EI:190 – i.e. at least 2100-1700 BCE. Militarev suggests that *n-* may be a prefix 'good', like Greek *eu-*, hence explaining *nefer* above.

				T1.41 Proto-C Khoisan **!an* 'good', also West Chadic: Ngizim *ányà* 'OK, well'.
35	GREEN	*w3ḏ*	ⲟⲩⲱⲧ [wōt] (SB)	V238 'be green' < Demotic *wt* 'be green' < Pyramid texts *w3ḏ* 'be green'. Linked to Semitic (e.g. Akkadian *warāḳu* 'green, fresh') although Takacs thinks that roots are independent. Possible Afroasiatic cognates: OS2546 *wuleẖ* 'be green': West Chadic; Dera *wəli-wəli* 'West Chadic'; Central Chadic: Boka *weχa*, Hwo *wuleγ-ən*
36	HAIR	*šny-w*		E IV.499 – cites derived meaning 'hair of plants' > 'date fibre', surviving as ϣⲛⲃⲛⲛⲉ [šnbnne] (S), ϣⲉⲛⲃⲉⲛⲓ [šenbeni] (B) – apparently no entry in Crum. T1.131 Bedouin *šindáw* 'fine head of hair'; North Omotic: Basketo *išinč*; Central Chadic: **šin-*; East Chadic: Mubi *cinkína*
			ϥⲱ [fō], ⲃⲱ [bō], ⲟⲩⲱ [wō] (S), ϥⲱⲉ [fōe] (S), ϥⲟⲩⲉ [fue] (S), ⲃⲱⲉ [bōe], ⲃⲟ [bo] (S), ϥⲱⲓ [fōi] (S), ϥⲱⲉⲥ [fōes] (S)	V280 < *f3* 'lock of hair' (New Egyptian, 1400-1100 BCE). Poss. link to D1664 **Pûĉ̣ʹoʾ* 'hair' > Hamito-Semitic root *pŝŝ* or D1736 **P̱ûn̦E̦ya* 'hair' or D1777 **p̣Ariʹʕʹ∇* 'strew, spread, extend' > Hamito-Semitic *prʕ* > Arabic *farʕ-* 'woman's hair'.
		śr	ⲥⲓⲣ [sir] (S)	*śr* attested during Middle Kingdom (2200-1700 BCE). V195 says 'women's hair as opposed to natural hair, probably a wig or hair of a donkey'. Proto-Afro-Asiatic **ĉaʕVr-* 'hair'; Proto-Semitic **ŝaʕr-*, **ĉaʕr-* 'hair (of body and head)', Akkadian *šārtu* 'hair, hairy skin; eyebrow', Hebrew *ŝēʕār* '*hair*', Arabic *šaʕr-* 'cheveux ou poil (chez l'homme)'; Berber **-zHar* < **ĉVHar-* 'hair', Semlal *a-zzär*, Seghrushen *a-zzar*, Izdeg *a-zzar*, Central Chadic Mofu *ẑára*, Gisiga *ẑara* 'feather'; Proto-East Chadic **ĉ/čVHVr-* 'feather', Dangla *číré* long f.', Migama *čéèrè*; Proto-Omotic **saHaR-* 'hair', Dizi (Maji) *saaru*.
			ϫⲟⲕ [ʒok] (SA), ϫⲁⲕ [ʒak] (S)	C761 'hair' < borrowing from Semitic – Hebrew *sak*, Greek *σακκος*
37	HAND	*ḏr*	ⲧⲱⲣⲉ [tōre] (SAL), ⲧⲱⲣⲓ [tōri] (B), ⲧⲱⲗⲓ [tōli] (F)	V219 < *ḏr* (Pyramid texts) D655 **gAr∇* 'hand' – East Cushitic Arbore *yirr* 'upper arm'
			ϭⲓϫ [ciʒ] (S), ϫⲓϫ [ʒiʒ] (B), ⲕⲓϫ [kiʒ] (P), ϭⲓϭ [cic] (S), ϫⲓϫϩ [ʒiʒh] (F)	V350 'hand' < Demotic *gḏ*, *gyḏ*, *kyḏ* < *gḏ* 'hand' (New Egyptian, 14-11BCE), Černy also cites *ḳḏ.t* 'hand' (New Egyptian (1400-1100 BCE)) Proto-Afro-Asiatic **gʷil-* 'knee, hand'; Proto-West Chadic Hausa *gwī̃-wā̃*, pl. *gwīyā* 'knee' (most likely <**gwil-*); Proto-Central Chadic **gVlaw-* 'thigh'; Low East Cushitic Dasenech *gíl* 'hand'; Proto-South Cushitic **guhul-* 'knee', 'ankle', Asa-Aramanic *ŋuluet* 'knee', Qwadza (Ngomvia) guhulu-ko 'ankle'; Dahalo (Sanye) *gilli* 'knee'. D1216 **Kät∇* 'hand' > Proto-Semitic *ḳāt∇* > Akkadian *ḳātu* 'hand, paw'
38	HEAD	*tp*	ⲁⲡⲉ [ape] (SAL), ⲁⲫⲉ [afe] (SAL), ⲁⲡⲏ [apē] (F)	V14 - 1. 'head', 2. 'chief', 3. 'capital, amount of money' – derived from *tp* 'head' (Pyramid texts) > Demotic *ʿp.t* 'head' D2284 **tôʹp̣ʾæ* 'head, top', Note also D2317 **ṭab∇* > New Egyptian *db.t*. Dolgopolsky links to other daughter families of Nostratic but provides no other Afroasiatic cognates.
			ⲕⲁⲣⲁ [kara] (S)	V85 'head' – V dismisses notion that the word is native to Egyptian and claims that the word is probably borrowed

				from Greek καρα ‘head’. D1182 **ḲâRḲub/pV̄* ‘top, summit, crown’ rejects notion that Semitic has borrowed word from Greek, citing Syriac *ḳarḳab̲’tā*. On this basis, perhaps V is wrong about Egyptian being a loanword as well. Note Middle Kingdom form *ḳ3b* ‘skull’.
		d̲3d̲3	ϫⲱϫ [ʒōʒ] (SB)	V334 ‘head’ < *d̲3d̲3* ‘head’ (Pyramid texts) D613 **goLu* ‘skull’, cf. East Chadic Kwang *gólò* ‘head’, etc. T1.66 Semitic *gulgul-*; N Omotic Dizi *geli, gaylli* ‘head’; Central Chadic Proto-Mandara **gʰara* ‘head’; East Chadic Kwang *gol*, *gólò* ‘head’.
39	HEAR	*smt*		Proto-Afro-Asiatic **sim-* ‘ear’; Proto-Semitic **šVmaʕ-* ‘hear’, Akkadian *šemû*, Ugaritic *šmʕ*, Hebrew *šmʕ*, Arabic *smʕ [-a-]*, Geʕez (Ethiopian), Amharic *sämma*, Mehri *hēma*, Harsusi *hōma* (*mēšmēʔ* ‘ear’), Soqotri *hyemaʕ*; Proto-Berber **sim-* ‘ear’, Ghadames *a-sim*; Proto-Central Chadic **ŝim-* ‘ear’, Tera *ẑim*, Bura *ŝîm*, Chibak *ŝɨmà*, Kilba *hímì*, Hildi=Margi Mbazuwa *ximi*, Mbara *ŝúmo*, Higi Baza *ŝɨmə*, Higi Nkafa *ŝɨmɛ*, Fali Kiria *ŝɨmu*, Fali Gili *ŝɨmwu*, Kapsiki=Higi Kamale *ŝɨməy*, Lamang *s̊imun*, Mandara=Wandala *ŝímà*, *símạ*, Malgwa *ŝímè*, Glavda *hyímìà*, Guduf *x̂imʌ̀*, Mofu-Gudur *ŝùmày*, Gisiga *ŝime-ḍ*, Mulwi *ŝúm*, Munjuk *ŝímáy*, *ŝəma-ni luwuŋ* ‘leaf of a tree’, Daba *ẑìmi*, Gude *limi-n*, Gudu *ẑi̇m*, Logone *ŝim*, Kusseri *ŝmē*, Musgu *x̂imḗ*, *simme*, *sumo*, Gidar *ẑum*, Proto East Chadic **sVm-* ‘ear’, Somrai *súmí*, Tumak *hīm* cf. *āw-häma* ‘leaf’, Ndam *hâm*, Nanchere *sem-áng*, Lele *sùmá*, Gabri *suma-in*, Kabalai *sàmí*, Dormo *sumá-nu*, Kera *kó-sɔ́ŋ*.
		sd̲m	ⲥⲱⲧⲙ [sōtm] (S), ⲥⲱⲧⲉⲙ [sōtem] (B), ⲥⲁⲧⲙ [satm] (SAA), ⲥⲟⲑⲙ [sotʰm] (B)	V199 ‘hear’ < *sd̲m* ‘hear’ (Pyramid texts) – cf. 21 EAR. D2133 **sV̄ṭî mV̄* ‘to hear’? with this present as Semitic root *šmʕ*
40	HEART	*’ib*	ⲩⲃ [ōb] (O)	V243 ‘heart’ < Demotic *‘ib* ‘heart’ < *’ib* ‘heart’ (Pyramid texts) Proto-Afro-Asiatic **li/ubb-*; Proto-Semitic **libb-* ‘heart’, Akkadian *libbu*, Hebrew *lēb*, *lēbāb*, Modern Arabic Syrian *libbe*, Geʕez (Ethiopian) *ləbb* (also ‘mind’), Amharic *ləbb* (also ‘*belly*’), Mehri *ḥə-wbēb*, Jibbali *ubbə́tə*, *ɛbbə́tə*, (< **lVbb-ət*), Proto-West Chadic **lVb-* ‘lungs’, Chip *ləp*; Proto-Central Chadic **libib-* ‘heart’ ~ **liḅ-* ‘belly’, Kilba *líbìbì*, cf. Gava *ʔurva*, Daba *liḅī*, Musgoy *lib*; Proto-East Chadic **ʔu-lVb-* ‘heart’; Beḍauye (Beja) *lɛw* (<*lib-?) ‘pylorus’; Central Cushitic (Agaw) **lVb-ak-* ‘heart’; Proto-Agaw **lab-ak-* ‘heart’, Bilin *läbbäka*, Qwara *läbakaa*, Dembea *läbakaa*, Qemant *ləbäkaa*; Proto-Saho-Afar **lubb-* ‘heart, soul, yolk, soft part’; Proto-Low East Cushitic **la/ubb* ‘heart’, ‘soul, spirit’, ‘chest’, Somali *laab* ‘heart’, ‘chest’, Oromo (Galla) *lubbuu* ‘soul, spirit’ [Possible borrowing from Arabic], Konso *luppoota* heart’, ‘soul, spirit’ ; Proto High East Cushitic **lubb-* ‘soul’, Sidamo *lubbo*, Burji (Bambala, Dashe) *lubbóo*; Proto-South Cushitic **li/ub-* ‘chest’, ‘spleen’, Asa-Aramanic *liba*, Ma’a (Mbugu) *lubúra* ‘spleen’; Omotic **yib-* (< **lib-?)* ‘heart’, Proto-Omotic **yib-* (< **lib-*?) ‘heart’, Anfillo (Southern Mao) *yiboo*
		ḥ3.t-y	ϩⲏⲧ [hēt] (SB), ϩⲧⲏ [htē] (S), ϩⲑⲏ [htʰē] (B)	V314 ‘heart’ < *ḥ3.t-y* (Pyramid texts), V links to *ḥ3.t* ‘front part’, but it appears that this semantic shift had already occurred by the time of the Pyramid texts. No immediately obvious Afroasiatic cognates.
				EI.155, T1.241 *idr* attested in literary texts, Late period.

				W Chadic: Angas *dur* 'heart'; East Chadic: Lele *dùrè*, *dùrò* 'middle, centre'; South Cushitic **dūr-* 'intestines'. D13 **ʔûHdV̄(RV̄)* 'breast' linked to *idr.*
41	HORN	*db*	ⲧⲁⲡ [tap] (S, B)	V218 - In EHU, Militarev relates this to general Afroasiatic, e.g. Semitic **dabab/y-* 'calf', Beḍauye (Beja) **daʔabi* 'breeding male (of all kinds of domestic cattle)', Low East Cushitic **dibi* 'calf, young bull', but semantics very loose. Possible Afroasiatic cognates.
		ʿb	ϩⲱⲃ [hōb] (A, B)	< *ʿb* in Pyramid texts. EHU-Militarev relates this to general Afroasiatic, e.g. Dahalo *ḅe:ʕa*, pl, *ḅe:áju* 'bulls, buffalos', Proto-Omotic *buʔ- 'bull', Proto-Semitic **bVʕVr-* 'cattle, camels', Proto-Berber **barar-* 'she camel'. Semantic transition to 'horn' appears specific to Egyptian. D225 also has West Chadic '*bara*' antelope, etc. but this etymology appears dubious. Possible Afroasiatic cognates.
42	I	*ʾink*	ⲁⲛⲟⲕ [anok] (SB), ⲁⲛⲁⲕ [anak] (ALF)	V12 Cognate with Akkadian *anāku*, appears to derive from a single base to which suffixes have been attached – cf. 95 WE
		wj		D822 **H$_2$oyV̄* extensive Afroasiatic cognates – e.g. Akkadian *yā-ti* 'me'; Agaw: Bilin *yi-t* 'me, to me'; East Cushitic Somali *í* 'me', West Chadic Hausa *-a* 'my'.
43	KILL	*smꜣ*	ⲙⲟⲩⲟⲩⲧ [muut] (S), ⲙⲉⲩⲧ [mewt] (S), ⲙⲟⲟⲩⲧ [mout] (S), ⲙⲱⲟⲩⲧ [mōut] (B),	V107, V128 Coptic must derive from *mt*, *mwt* 'death' – i.e. 'to dead someone'. General Afroasiatic. – cf. 17 DIE
			ϩⲱⲧⲃ [hōtb] (S), ϧⲱⲧⲉⲃ [χōteb] (B)	V316 < Middle Egyptian (2200-1700 BCE) *hḏb* 'to kill', related to Egyptian: *ḫb3* 'destroy' (pyr), *ḫb*, *ḫbḫb* 'kill' (Ptolemaic period) Poss. relationship to Proto-Afro-Asiatic **qVbVʔ-*, Proto-West Chadic **qV(HV)b-* 'split or crack (wall preparatory to falling)', 'break', 'slaughter', 'cut', Hausa *gágábee* 'split or crack', Tangale *kɛɛbe* 'break', *kabi* 'slaughter, cut', Guruntum *ŋgwabí* 'break'
44	KNEE	*mꜣs-t*		No attested forms in Coptic. T3.101 < **mls.t*, like Central Chadic: Gisiga-Dogba *muluwes* 'knee'.
		See note	ⲡⲁⲧ [pat] (S), ⲫⲁⲧ [p^{h}at] (B)	V165 < *p3d* (18th Dyn.– 1600-1400 BCE) 'knee' Proto-Afro-Asiatic **paʔud-* 'thigh, knee', Berber **a-fud* 'knee', West Chadic **pund-* 'thigh', Bolewa *pundo*, Karekare *fəntáu*, Dera=Kanakuru *púndó*, Ngamo *hùndó*, Kifri=Giwo *fònḍó*, Gera *pìndí*, Galambu *pə̀ndə́*; Central Chadic **fVʔud-* 'thigh', Gaanda *fùḍa-tà*, Gabin *fịḍə-tə̀*, Boka *fùḍə̀-tə*, Hwona *fùḍà-ra*; East Chadic **paʔud-* 'hip, thigh', Jegu *paado*, Mubi *fǘdí*, Birgit *fáadì*; Low East Cushitic **baʔud-* 'hip', Somali *baʔudo*; Omotic (?) **paHad-al-* 'inside of the thigh', Ometo *paadaallaa.*
			ϭⲁ̄ⲗⲟϫ [caloʒ] (B), ϭⲁ̄ⲗⲁϫ [calaʒ] (F)	V340 - < [wlj (SAL) 'fold, bend' – Semantic development 'the thing that bends'. Etymology not clear, but possible relationship to *ḳrf* 'to bend' – attested in the Book of the Dead (1600-1300 BCE). Actually fits much better with D1060 **ḳiy$_L$V̄íVʕi?* 'to bend, bow', with East Chadic *qallōʕ-*'bend'
45	KNOW	*rḫ*	See note	> s- (SABF), es- (SF), ǀ(A) 'know, be able' (Cr541). Central Cushitic (Agaw) **ʔarʔ-* 'know', Bilin *arʔ*, High East Cushitic **raʔ-* 'know' Hadiya (Gudella) *laʔ-*; , Warazi (Dullay) **ʔarH-* 'know', Gawwada (Gawata) *ar*, Tsamay (Dume, Gaba, Kule) *ar*, Omotic *ʔer- 'know',Ometo *ʔer-*, *ɛrɛ*, Wolamo (Wolaitta) *er*, Male *er*,

				Janjero (Yamma, Yemsa) *ar*, Kafa (Kaficho) *ariy*, Mocha *ari(hä)*, Anfillo (Southern Mao) *ɛrri*, Chara *ar*, Gimirra (Benesho, She) *ɛrr-*, *era*. V253 reports that link between Beja *reh* 'to see' and Egyptian *rḫ* is not established.
			ⲉⲓⲙⲉ [eime] (S), ⲉⲙⲓ [emi] (B), ⲙⲙⲉ [mme] (AL), ⲉⲓⲙⲓ, ⲓⲙⲓ [eimi, imi] (F),	V62 < *ʿm* 'know, learn' – New Kingdom (16-11 BCE). Proto-East Chadic **Hum-* 'see', *Mubi ʔúm*.
		swn	ⲥⲟⲟⲩⲛ [sown] (S), ⲥⲱⲟⲩⲉⲛ [sōun] (B)	*swn* 'to know about sthg.' > Coptic 'know'. Attested in Late Egyptian (800-400 BCE), but in EHU-Militarev, we have Semitic **šVnaḥ-* 'appear in somebody's mind' (?), Berber **sin-* 'know', Ghadames *essən*, Siwa *əssən*, Ghat *əssən*, Ayr *əssən*, Izdeg *isin*, Izayan *isin*, Iznassen *əssən*, Snus *əssən*, Shenwa *sən*; West Chadic *syani- 'know', Hausa *sáni,šínà*, Dera=Kanakuru *šen-*, Warji *sən*, Kariya *sən-*, Diri čən, Miya *sən*, Pa'a *sinə̀*; Cagu *sən*, Siri səniwi, Mburku *sin*, Jimbin *sən*, Sayanchi *yisə̀ŋ*, Bokos *šə́ŋ-î*, Kulere *syen*; Central Chadic *sin-H- 'know', 'recognize', 'see', Tera *zə̀ní* 'know', Gaanda *sɨni* 'know', Gabin *šīni* 'know', Boka *šini* 'know', Hwona *sɨn* 'know', Margi *sini* 'know', Wamdiu *sɨni* 'know', Hildi=Margi Mbazuwa *sìnì* 'know', Higi Futu *sɨnə̀-gi* 'know', Higi Baza *šliyò* 'know', Higi Nkafa *sɨnà-ta* 'know', Higi Ghye *sùna-̀gəy*, Glavda *sər* 'know', 'see', Mofu-Gudur *-sàr-* 'know', Gisiga *san* 'know', Mafa=Matakam *sən* 'know', *sə́n* 'recognise', Daba *sīn* 'know', Musgoy *səŋ* 'know', Gude *(kha)šīn* 'know', Logone *sə́n* 'know', Buduma=Yedina *hin* 'know', Gidar *sən* 'know'; East Chadic **(ʔV-)sVn-* 'know', 'learn', Somrai *ósen* 'learn', Tumak *hàn* 'know', Ndam *hə̄nà* 'know', Lele *sèn* 'know' (s.o.), Kwang *àsìnē* 'know' (s.o.), Mobu (dial. Kwang) *ásə́né* 'know', Ngam (dial. Kwang) *àsìne* 'know', Bidiya *ʔìsàn* 'know', Mokilko *sùuné* 'know'; Low East Cushitic **seHen-* 'memory', Oromo (Galla) *seenaa*.
46	LEAF	No entry		*ḏrḏr* – 'leaf' (Amarna). Proto-Semitic **gurgur-* 'plant', Akkadian *gurgurru*; West Chadic **gwargwar-* 'kind of grass', Hausa *gȍràgōrà*; Central Chadic **gwagur-* 'kind of grass', Mafa=Matakam *gwá-gura*.
		See note	ϭⲱⲃⲉ [cōbe] (SAL), ϭⲱⲱⲃⲉ [cōwbe] (S), ϫⲱⲃⲓ [hōbi] (B), ϭⲱⲃⲓ [cōbi] (F)	V335 < *g3b.t* 'leaf' in Medical texts, i.e. at least since New Kingdom (12 BCE) Cognate with D1109 *ḳAP_V?* 'leaf' East Chadic: Kwang *ḳā́pí* 'leaf'
47	LIE	*sḏr*,	ϣⲁⲓⲉⲣⲉ [šaiere] (S), ϣⲁⲓⲣⲓ [šairi] (B)	V259 *sḏr*, attested since Pyramid texts – 'lie, sleep, spend the night' – present in Coptic as ϣⲁⲓⲉⲣⲉ (S), ϣⲁⲓⲣⲓ (B) 'couch, cohabitation, sheep pen' However s > š not easy to explain. Possible link to OS1324 - **ḫadir* 'sleep, be benumbed': Semitic **ḫadar*; Saho-Afar **ḥVdir-* 'sleep'; Lower East Cushitic **hudur-* 'sleep'; Dahalo *haḏḏura* 'sleep'.
		See note	ⲛⲕⲟⲧⲕ [nkotk], ⲛⲕⲟⲧⲉ [nkote] (S), ⲛⲕⲁⲧⲉ [nkate] (SSA)	V89, Cr224 has ⲉⲛⲕⲁⲧⲉ [enkate] (F) 'sleep, lie down' or ⲕⲁⲧⲉ [kate] 'sleep' < *ḳdy* – already in Pyramid texts and cpd. *nḳdd* 'sleep' since Middle Egyptian (21-17 BCE). Cf. 76 SLEEP
48	LIVER	*myz-t*	ⲙⲁⲟⲩⲥⲉ [mause], ⲙⲁⲟⲩⲥⲓ [mausi] (Old)	Old Coptic ⲙⲁⲟⲩⲥⲉ, ⲙⲁⲟⲩⲥⲓ 'liver'. D1380 – Chadic *mayya*, etc.
			ⲟⲩⲫⲁϫⲓ [ufaʒi] (B)	Cr499, etymology unclear – No entry in V – could this just be a borrowing of Greek *ἧπαρ*? Or is it related to

				Chadic forms in D1690 – High Eastern Cushitic *afale* 'liver'; Also in OS775 Omotic **'a-fall-* 'liver' – related to Central Chadic **fa-ful-* 'lungs', West Chadic **ful-* 'lungs'. Possible Afroasiatic cognates.
49	LONG	*3wy*	ⲱⲟⲩ [ōu] (B)	Cr533 ⲱⲟⲩ (B) 'be wide, long' (omitted by Militarev). E.g. in wou nhyt 'be patient' ('large of heart'). Proto-Afro-Asiatic **wat-/*yat-* 'be big'; Proto-East Chadic **yat-* 'big', Migama *yâtā* f., *táttà* m. , *táattà* pl., Sokoro *yódī*
		See note	ϣⲓⲁⲓ [šiai] (SB)	V259 - 'high' > *ḫyy* 'high, long, loud' (New Egyptian, after 1300 BCE) > ϣⲓⲁⲓ (SB) 'extend, grow' or 'be long, high'. Also attested as related ϣⲓⲏ [šin] (SB), ϣⲓⲏⲉ [šine] (S), ϣⲓⲉ, ϩⲓⲏ [šie, hin] (S^{o}), ϩⲓⲉ, ϩⲓⲉⲓ [hie, hiei] (A), ϣⲓⲏⲉⲓ [šinei] (F) 'length', also V93 ⲗⲁ-ϣⲓⲏ [la-šin] (S) 'having length'. ϣⲓⲏ etc. appears to be related to Proto-East Chadic **hin-* 'increase', Lele *hin*. Link to *k3* 'high' seems dubious on phonological grounds, even if semantically possible.
			ⲛⲓϣϯ[ništi] (B), ⲛⲟϭ[noc] (S)	Militarev lists these forms as Coptic innovations, but they merely appear to be 6 BIG and don't specifically mean 'long'. cf. 5 BIG (which notes D1553 *n̄VNĉV̦ʔV̦* 'high, big, strong')
50	LOUSE	*zby*	ⲥⲓⲃ [sib] (S), ⲥⲓⲡ [sip] (B)	V183 'vermin, tick' *zb.t* 'vermin in general' (Middle Egyptian). EIII.492 has *zb.t* (demonstrated since the Middle Kingdom) - dual meaning of 'insect' and 'skin disease'. Proto-Semitic **d_ VbVb-* 'fly' (n.), Hebrew *zəbūb* 'flies', Aramaic *dībābā* 'fly', Syrian Aramaic *dabbābā, debbābā* 'fly', Arabic *d_ubāb-* 'fly; bee'; Proto-Berber **ʒVb-* 'fly' (n.), 'horse-fly', Ghat *a-zəb(b)* 'fly', Ayr *e/i-zəb* 'fly', Ahaggar (Tahaggart) *a-həb* 'fly', Tawllemmet *i-zəbb* 'fly', Taneslemt *i-zəbb* 'horse-fly', Izayan *i-zəb_* 'horse-fly'; Proto-West Chadic **ǯVb-* 'bee', Tangale *sɔmbɔ* 'house fly', Buli *šimbi* 'firefly'; Proto-Central Chadic **ǯab(VH)-* 'locust in the hopper state', 'termite', 'fly', Bura *ǯeba* 'locust in the hopper state', Fali Gili *žiḅi* 'fly', Gudu *ǯáḅà-cù* 'termite', Bata *ǯẹ́bi* 'fly'; Proto-East Chadic **ʔVǯimb-* 'bee', Migama *ʔǯîmbè*; Proto-High East Cushitic **biziz- ~ *buzabuz-*'beetle', 'gnat', Burji (Bambala, Dashe) *bizizee* 'beetle', *buzabuzo* 'gnat'. D2771 **Ǯü̦ˈbV̦bV*'insect'.
			ϩⲗⲱⲙ [hlōm], ϩⲗⲟⲙ [hlom] (S), ⲗⲉϩⲗⲉⲙ [lehlem], ⲗⲉϩⲗⲏⲙ [lehlēm] (B)	V298 'vermin flea, louse, mosquito', V says may derive from hlym (L) No entries in EHU-Militarev, but presumably related to *ḥrj* 'to fly' – Late Egyptian (EIII.146) – in EHU-Militarev as Proto-Semitic **ḥVwVl-* 'jump (on horse-back)', Arabic *ḥwl [-u-]*; Proto-East Chadic **Hwal-/*Hal-* 'jump', Tumak *wǎl*, Dangla *ǎlé*. Also D1184 **ḲuRmV*'worm, insect' - West Chadic Pero *kórómɔ̀* 'louse'; East Chadic Kabalay *kúrrɜ́* 'fly'
51	MAN	*rmṯ*	ⲣⲱⲙⲉ [rōme] (S), ⲣⲱⲙⲓ [rōmi] (B), ⲗⲱⲙⲓ [lōmi] (F)	V172 < *rmṯ* 'man' EII.422 states 'Plural form is the usual term since the Pyramid texts'. cf. 64 PERSON
		z	ⲥⲁ [sa] (SB)	V181 'tradesman, craftsman' < *z* (Pyramid texts) 'man', cf. 64 PERSON
52	MANY	*ḥḥ*	ϩⲁϩ [hah] (S)	V320 'multitude, many' < *ḥḥ* 'million, large number (1st Dyn.) – homonyms 'floodwaters of the Nile' – semantic link?

				No immediately obvious Afroasiatic cognates.
			ⲙⲏⲏϣⲉ [mēēše] (S), ⲙⲏϣ [mēš] (B)	V128 Coptic ‘lot of’ < *mšʿ* ‘troops, army’ (Middle Kingdom) Presumably links to D1427 **mon̄V* ‘many, much’ e.g. Central Cushitic: Agaw, Awngi *ménč* ‘many, much’, East Chadic: Migama *mãní* ‘many’.
		ʿš3	ⲛⲁϣⲉ- [naše-], ⲛⲁϣⲱ [našō] (SAABF) but also ⲁϣⲁⲓ [ašai] (SB), ⲁϣⲉⲓ [ašei] (A), ⲁϣⲛⲉⲓ [ašnei] (AF), ⲁϣⲉⲉⲓⲧⲉ [ašeeite] (SB)	Cr236 and also Cr22b ⲁϣⲁⲓ etc. ‘become many, multiply’ Proto-Afro-Asiatic **ʕaĉVr-* ‘clan’, ‘friend’, ‘family’; Proto-Semitic **ʕaŝVr-* ‘clan’, ‘friend’, ‘family’, Arabic *ʕašīr-* ‘friend’, Mehri *ʔāŝər* ‘friend’, Jibbali *ʕáŝər/aʕŝért* ‘member of the same group, fellow-tribesman’; *ʕáŝər/ʕíŝɔ́r* ‘husband; close friend’, Soqotri *ʕŝr* ‘live in society, mix, make friends’, NB may be linked to *ʿasara* (general Semitic word for ‘ten’); Proto-West Chadic **HVĉ(y)ar-* ‘friend’, ‘person equal in age’, Hausa *ç̣ārā́* ‘person equal in age’, Mupun *šiār* ‘friend’, Sura *šār* ‘friend’, Angas *šēr* ‘friend’, Montol *čai-na* ‘friend’, Dera=Kanakuru *šéerò* ‘friend’, Tangale *sɛɛrɔ* ‘friend’, Galambu *čòr-* ‘friend’.
			ⲉⲙⲁⲧⲉ [emate], ⲙⲙⲁⲧⲉ [mmate] (S)	V43 ‘very, many’ – compound ‘to be achieved’ C19a (ⲁⲧⲟ ‘multitude’) *mty* < *mty/mtr* ‘to be present, to witness’. Or possible relationship to OS1811 **mVʾad-* ‘be large’; Proto-Semitic **mVʾad-* ‘many, much, very’, Akkadian *mādu*, Hebrew *m*^{e}*ʾōd* ‘many’; Proto-Central Chadic **mVd-* ‘large’, Daba *mədde.*
53	MEAT	*ʾif*	ⲁϥ [af] (SB), ⲁⲁϥ [aaf] (SF), ⲉϥ [ef] (ALO)	V21 *ʾif* (Pyr.) > *ʾiwf* (18th Dyn.) Proto-Afro-Asiatic **fVʔ-* ‘body, flesh, meat’; Proto-Berber **fiyy-* ‘meat’, Zenaga *t-fiʔǯǯi* <**-fiyy*, Semlal *ti-fiyi*, Proto-Central Chadic **faw-* ‘body’, Gaanda *fə̀-ta*, Gabin *fə̀-tə*, Hwona *fa-ra*, Mofu-Gudur *vɔ̀w*, Gisiga *vo*, Buduma=Yedina *fu*; Proto-South Cushitic **fuʔ-un-* ‘meat’, Iraqw (Mbulu) *fuʔuni*, Burunge (Mbulungi) *fuʔunai*
54	MOON	*iʿḥ*	ⲓⲟϩ [ioh] (B), ⲉⲱϩ [eōh], ⲓⲱϩ [ioh] (O), ⲟⲟϩ [ooh] (SAL), ⲁⲁϩ [aah] (F)	V69 attested in Pyramid texts (EV.67) but no evident Afroasiatic cognates, while *ḳḥ* ‘moon’ is only attested in the Book of the Dead (c. 1550 BCE onwards) but we have Proto-Afro-Asiatic **ḳiḥ-* ‘moon’ and Semitic **ḳḥ* ‘light red, rose’; Proto-Central Chadic **kiy-* ‘moon’, Mofu-Gudur *kiyá*, Gisiga *kíyà*, Mada *kya*, Mafa=Matakam *kìyà*, Buduma=Yedina *keá*; East Chadic **kway-* ‘moon’, Dangla *kɔ́yɛ̀*, Migama *kóyò*, Bidiya *koya.* Also OS1571. T1.280 notes comparison with Semitic **wariḫ*; East Cushitic **lʿḥ*, Berber **ta-lli-t* ‘moon, month’.
55	MOUNTAIN	*mn(.t)*		EII.64 – 19th/20th Dyn. T3.247 North Omotic *mel-o* ‘stone’; East Chadic Kwang dialects: *mOlδo* ‘mountain’
		ḫ3śt		*ḫ3śt* ‘mountainous land’ (as opposed to flat land) > *št3* (Ptolemaic period). Not attested in Coptic. Proto-Afro-Asiatic **ḫurs-* ‘mountain’; Semitic **ḫurš-* ‘rock, mountain’, Akkadian *ḫuršu*, Hebrew *ḥōrēš*; Proto-West Chadic **rwaHas-* ‘mountain’, Tala *ro:si.*
		ḏw	ⲧⲟⲟⲩ [tou] (S), ⲧⲱⲟⲩ [tōw] (B), ⲧⲁⲩ [taw] (ALF)	V223 *ḏw* (Pyramid texts) Proto-Central Chadic **gwaʔ-* ‘stone’, ‘rock’, ‘mountain’, Mofu-Gudur *ŋ́-gwa* ‘rock’, ‘mountain’, Lame *ngwàí* ‘stone’, Peve *gwoiʔ* ‘stone’, ‘mountain’, Zime-Dari *gwoy* ‘stone’, ‘mountain’, Zime-Batna *guèiʔ* ‘stone’. D593 *gʹUbʕV* ‘hill, mountain’
56	MOUTH	*r3*	ⲣⲟ [ro] (SB)	V171 *r, r3* ‘mouth’ V219 compound *tp-r3*

				Proto-Afro-Asiatic **rVʔ-/*rVw-* ‘speak’; Proto-Semitic **rVwVy-* ‘render other person’s words’, Arabic *rwy [-i-]*; Proto-West Chadic **ruru-* ‘shout’ (n.), Hausa *ruri*, Sura *ruruu*, Karekare *rúuru*; Proto-Central Chadic **ray-* ‘speak’, Zime-Batna *ré* (possible link to Central Chadic **riʔ-* ‘to laugh’)
		wt		*wt* ‘tongue or mouth’ D2547 **‘wot̨Eʔ̨V* ‘speak, utter sounds’; East Chadic: Kera *wãté* ‘say’; Central Chadic: Gude *wùḍá* ‘formal oath’, Logone *wá-* ‘say’, etc.
			ⲡⲁⲓⲉϭⲉ [paiece] (A)	V159 *pg3* ‘opening’ (Middle Kingdom) OS1921 Hebrew *pʿr* ‘open’ – also present in Chadic.
57	NAME	*rn*	ⲣⲁⲛ [ran] (SB), ⲣⲉⲛ [ren] (ALM), ⲗⲉⲛ [len] (F), ⲣⲓⲛ [rin] (P)	V176 (in Pyramid texts) - may be related to Arabic *ran*, *yarinn* ‘make a noise’, but by no means certain. EII.425 – name of person, god, thing (including its reputation) T1.39 proto-Nilotic **ka-Rin*
		k3		EV.92 *k3* - 22nd Dyn. ‘say, invoke name (of deity)’, but still attested in Ptolemaic times – also *Ka* ‘soul, spirit, essence of being, personality’ D840 **koʔi̇*‘ ‘to call’; Arabic *kaʔaya* ‘cause pain through hard words’.
58	NECK		ⲙⲁⲛϩ [manh] (S), ⲙⲁⲭ [mak^{h}] (S), ⲙⲟⲕϩ [mokh] (A), ⲙⲉⲛϩ [menh] (A), ⲙⲉϩⲭ [mehk^{h}] (O)	EII.163 – attested since Middle Kingdom/18th Dyn. as *mkḥ3* ‘back of head’, Cr163b. D1388 **mâḳ̨V̨ ħa* ‘(nape of neck), back’: Beja *mōk* ‘nape, throat’; Agaw: Bilin *məkk^{w}a* ‘buttocks’; East Cushitic: Afar *makuħ* ‘spine, spinal cord’, Yaaku *muk* ‘lower side of body’, Rendille *mókkòlò* ‘bones of lower spine, small of back’, Boni Jara *múkkə* ‘buttocks’.
		nḥb.t	ⲛⲁϩⲃ [nahb] (S), ⲛⲁϩϥ [nahf] (S), ⲛⲁϩⲃⲉ [nahbe] (B), ⲛⲁϩⲟⲩⲓ [nahui] (B), ⲛⲉϩⲃⲓ [nehbi] (F)	V151 (in Pyramid texts) ‘nape of neck, shoulder’ < *nḥb.t* ‘nape of neck, neck’ EII.292 T1.302 cites link to Akkadian *lâbānu.*
		ḫḫ	ϩⲁϩ [hah] (S), ϧⲁϧ [χaχ] (B)	V283/V320 (in Pyramid texts) ‘neck, back of neck, nape’ Proto-Afro-Asiatic **q̇aw(q̇aw)-* ‘throat’; Proto-West Chadic **q̇aq̇wa-* ‘neck’ , ‘goitre’, Hausa *mā̃-ḳõḳò* ‘goitre’, Gerke=Yiwom *ɣɣà* ‘neck’, Boghom *gwãy* ‘neck’; Proto Central Chadic **q̇way-* ‘throat’, larynx’, Logone *ɣ’áyē* ‘Kehle’, Afade *ɣwàyèɣwàyè*; Proto-South Cushitic **waḳ-* ‘neck’, Ma’a (Mbugu) *waka.* D1242 *ḳüZ|3∇(-r∇) ‘neck’ – East Chadic *qoǯ* ‘neck’, extensive Cushitic, Oromo, etc.
		wśrt		*wśrt* ‘neck, back of the neck’ in Pyramid texts, Book of the Dead, EI.360 Proto-Afro-Asiatic **sar-* ‘(lower) back; tail; back, below’; Semitic **š/sar-* ‘vertebral column, backbone, backm, behind, back, after’, Arabic *sarīr-* ‘base of head, where it joins the neck’, *sarāt-* ‘back, middle’, Amharic *säräsär* ‘*vertebra, spinal cord, sinew*’, Gurage *sässär do*, Mehri *sār* ‘*behind; back, backwards*’, Jibbali *sér* ‘*behind; back, backwards*’, Harsusi *sār, ser* ‘*behind, after*’, Soqotri *sar* (*seri*) ‘*rear*’; West Chadic **sar-* ‘middle of back’, Hausa *sara*; Proto-Central Chadic **sar-* ‘waist’, Bura *kusar* ‘the lower part of the back; the waist’, Chibak *ku-sar*, Kilba *sar*, Wuba sar; Beḍauye (Beja) *sára* ‘back’; Central Cushitic (Agaw) **sVr-* ‘back’, ‘lower part’, Khamir *səra* ‘back’, Awiya (Aungi) *sər* ‘lower part’; Saho *sara* ‘tail, backside’, Afar (Danakil) *sàrra* ‘rear’; High East Cushitic **sar-* ‘tail’; South Cushitic **sir-* ‘buttocks’ Burunge (Mbulungi) *sira*;

				Dahalo (Sanye) *sáre* 'lower back, meat above buttock', Mogogodo (Yaaku) *sèrɛy* 'below, down'
59	NEW	*mȝ*	ⲙⲟⲩⲓ [mui], ⲙⲟⲩⲟⲩⲓ [muui] (F)	V109. Proto-West Chadic **mwaH-* 'new', Fyer *mu*, Kulere *mōhwè*, Daffo-Butura *mwa*; Proto-Central Chadic **mway-* 'new', Tera *mìwà-kədi*, Mofu-Gudur *máwúya*
			ⲃⲣⲣⲉ [brre] (S), ⲃⲉⲣⲓ [beri] (B)	V30 In Demotic as *bry*. V writes "relationship with *m3wy* 'to renew oneself' (Old Kingdom) is not ruled out". More likely related to general Afroasiatic, as in D225a *b'A̰ʕVrV* 'ungulate' in sense of 'young animal', e.g. Akkadian *būru* 'young calf, foal'. General Semitic **bar-* 'son'; Proto-Berber **barar-* 'son', Ayr *a-barar*, Ahaggar (Tahaggart) *a-burir*, Tawllemmet *barar*, Proto-West Chadic **bar-/*byar-* 'young girl', 'child', 'son', Hausa *bə́rà* 'young girl', Angas *par* 'child', Galambu *bàrywà* 'young girl', Warji *mbiri-na* 'son', Guruntum bòoro 'young girl', Fyer *ɓarà* 'son'; Proto-Central Chadic **bar-* 'young boy, male animal', Gude *barə̀wá*; Proto-South Cushitic **mbur-* 'older boy, lad, young man', Ma'a (Mbugu) *mburatú*; Dahalo (Sanye) **bōr-* 'boy'.
			ϣⲁⲓ [šai] (S)	V258 < *ḫyy* 'child' and *ḫ* 'be young' in Book of the Dead, New Kingdom. Proto-Central Chadic **ḥ/haḥ/ha-* 'young', 'new', Mbara *hahá* 'new', Munjuk *hẽhẽ* 'new', Musgu ḥáḥai 'young'; East Cushitic: Gawwata *qayte* <**ḳay-t-*, Omotic: Ongota *ḳawtita.*
60	NIGHT	*wḫ-t*	ⲟⲩϣⲏ [ušn] (SAAF), ⲟⲩⳉⲓ [uχ_2i] (A), ⲟⲩϣⲓ [uši] (F),	V239 – actually *wḫ3/ḫw3* – Meaning at time of Pyramid texts: 'darkness, obscurity' >'evening'. V also attests *wš3(w)* – which appears in the New Kingdom 'night, evening, darkness', but thinks it may be a separate word, in which case, the forms of S, F may derive from the latter, but are no later than the New Kingdom . Proto-Central Chadic **wuHVŝ-* 'darkness', Gabin *wûŝa.*
		grḥ	ϭⲱⲣϩ [bōrh] (SLF), ϭⲱⲣⲁϩ [bōrah] (S), ϫⲱⲣϩ [ʒōrh] (BO), ϫⲱⲣⲉϫ [ʒōreʒ] (B), ⲉϫⲱⲣϩ [eʒōrh] (B)	V347 < *grḥ*, already in Pyramid texts. V explains ⲉϫⲱⲣϩ as *r grḥ*. i.e. with the *r* as prefix < D724 **gVRVbV* 'dark'
		nn		EII.274 Proto-Afro-Asiatic **naw/yn-* 'night'; Proto-West Chadic **nwan-* 'shadow', Dera=Kanakuru *nóonì*; Proto-East Chadic **ʔi-nyan-* 'night', Ndam *ʔīnyán.*
		šśr3t		EIV.545 (in Pyramid texts, Book of the Dead, Ptolemaic period) Proto-Afro-Asiatic **sVsVʔ-* 'night, darkness'; Proto-West Chadic **sis-* 'shadow', Zaar *šis*; Central Chadic **sisVʔ-* 'shadow'; Proto-Central Chadic **sisVʔ-* 'shadow', Mbara *sìsé*, Munjuk *seze*, Nzangi furi *šišìʔi*, Musgu *šɛšéɛ*; Omotic: Janjero *wassi* (met. < **saw-ʔ*), Chara *sōsa,* Dime *sūtu* < **saw-t-*, Hamer *sṓti* 'night'
61	NOSE	*fnḏ*		D1740 **pVñčV* 'nose' Proto-Afro-Asiatic **fung-*, 'nose, mouth', Egyptian *fnd_* (Pyr.) 'nose', Proto-West Chadic **fung-* 'toothless mouth', 'mouth', 'hole', Hausa *fāfungà* 'toothless mouth', Sura *fuŋ* 'hole', Angas *fuŋ* 'hole', Warji *vinahə-na* 'mouth', Kariya *vinahə* 'mouth', Diri *vəna* 'mouth', Miya *vun* 'mouth', Pa'a *vingi* 'mouth', Cagu *vehe* 'mouth', Siri *vengi* 'mouth', Mburku *vəŋhu* 'mouth', Jimbin *vina* 'mouth', Fyer *fuŋ* 'hole'; Proto-Central Chadic **fun(g)-* 'nose', 'blow nose (vb.)' 'mouth' , Mulwi *fíngí* 'blow nose

				(vb.)'; Munjuk *mer-feŋ*'; Beḍauye (Beja) *gunuf* 'nose' (met.) Warazi (Dullay) Cf. *ping-* 'opening, hole'.
		šr.t	ϣⲁ [ša] (S), ϣⲁⲓ [šai] (B), ϣⲉⲉ [šee], ϣⲉⲉⲡⲧ [šeept] (AF)	V253 < Demotic *šy* < *šr.t* 'nose' - in Pyramid texts. Probably related to Proto-Afro-Asiatic **sa/uf-*, 'blow, smell, breathe', Proto-Semitic **šVwVp-* 'to blow, smell', Hebrew *šwp* 'to blow; to emit poisonous breath, to poison', Judaic Aramaic *šwp* 'to blow', Arabic *swf* 'smell'; Proto-Central Chadic **sVf-* 'wind', 'breathe', 'life', Higi Nkafa *sɛ̀fi* 'wind', Fali Kiria *sàfu* 'wind', Fali Gili *sàfu* 'wind', Kapsiki=Higi Kamale *sɛ̀fwi* 'wind', Dghwede=Zəɣwana *sáfà* 'breathe', Logone *šifa* 'breathe', 'life'; Proto-Low East Cushitic **suf-* 'smell, scent, sniff' (v.), Oromo (Galla) *suuf-* Gr 365
62	NOT	*n* , *'in*	ⲛ [n] (SB)	V135 Negative particle D1524 **ǹi* 'not'
		'in	ⲁⲛ [an] (SB), ⲉⲛ [en] (ALF)	V3 NB also a < an, emphatic particle – similar development to French, 'Je vois pas' < 'Je ne vois pas'. D47 **ʔäynā̂*, etc. 'nothing, there isn't' – linked to Hebrew *'ayn* 'there isn't'.
			ⲙⲙⲏ, ⲙⲏ [mmē, mē] (SAA), ⲙⲙⲟⲛ [mmon] (F), ⲙⲏⲧ [mēt] (SB)	V113 *bn* (New Kingdom). T2.200 'Generally accepted that it continues Old Egyptian *nn* via a dissimilation of the nasal.
63	ONE	*w'*	Masc. ⲟⲩⲁ [ua] (S), ⲟⲩⲁⲓ [uai] (B), Fem. ⲟⲩⲉⲓ [uei] (S), ⲟⲩⲓ [ui] (B)	T1.41 PCKhoisan **/ui.* NB Trombetti linked to Southern Arabic forms *wo.*
64	PERSON	*zy*	ⲥⲁ [sa] (SB)	See 51 MAN. Alternative form *z* 'man' in Old Egyptian – V181 - Coptic ⲥⲁ 'person exercising a trade'. *z-t* 'woman' General Afroasiatic EHU-Militarev Proto-Afro-Asiatic **ʒ/ǯa-* 'man', Egyptian *z* 'man' (OK), *z-t* 'woman', Proto-West Chadic **ʒa-f-* 'man' (?), Warji *ǯi-fa-na*, Kariya *ǯi-fa-na*, Diri *nǯə-vu*, Miya *ǯi-fa-na*, Pa'a *nǯaa*, *nǯuu*, Cagu *za-fu*, Mburku *ǯi-fu*, Jimbin *ǯu-hu*; Proto-Central Chadic **ʒa-* 'man', 'husband', Higi Futu *zù* 'man', Higi Baza *zù* 'man', Higi Nkafa *zà*'man', Kapsiki=Higi Kamale *-za* 'man', Zime-Dari *n-ǯi* 'man','husband', Zime-Batna *nʒì* 'husband', Masa *sa-na* 'man', Banana *sa-na*; Proto-East Chadic **ʒV-* 'person' 'man', Dangla *zì* 'man', Jegu *ǯá* 'man', Mubi *nǯṓ* 'man', Birgit *ǯà* 'man'; Omotic Dime *ʔamz-* (dissim. <* *ʔanz-* <**ʔa(n)ǯ/ʒ-*. Cf. Ari Hamer *anz-a* 'girl, female'.
		rmṯ	ⲣⲱⲙⲉ [rōme] (SA), ⲣⲱⲙⲓ [rōmi] (B), ⲗⲱⲙⲓ [lōmi] (F)	V172 Already in the Pyramid texts as *rmṯ* 'man, in sense of human being' > Middle Egyptian *rmṯ.t* 'humanity, people'. Note that in maintaining the *l*, the Fayumic dialect is actually more archaic than Old Egyptian. Proto-Semitic **lʔm, *lmm* 'to get together, unite by common consent, peace treaty', **liʔa/ām-* 'union, fraternity, people', Akkadian *lim*, nom. *līmu (liʔmu)* 'one thousand', Ugaritic *lim* 'pueblo, clan', Hebrew *ləʔōm*, *ləʔūm*, pl. *ləʔummīm* 'people, nation'; Proto-West Chadic **lilim-* 'assembly for special occasions', Tangale *lilim*; Proto-Central Chadic **luma* 'market' (?); Proto-East Chadic **lamVm-* 'gather' (intr.), 'gather, pile', Bidiya *lùm* 'gather', Mubi *lámmà* 'gather', Mokilko *lũmme*`'gather, pile'; Proto-Low East Cushitic **lamm-* 'companion, relative', Somali *lammaan* 'to be a companion', Oromo (Galla) *lammii* '(close) relations' (unless < Arb); High East Cushitic **lámm-* 'person' ~

				**mVll-* 'close relative' (met.), Hadiya (Gudella) *moollo* 'close relative', Burji (Bambala, Dashe) *lámmi* 'person'; South Cushitic **lama(l)-* 'age-set', Asa-Aramanic Cf. *lama* 'serpentine ochre marking on body', Qwadza (Ngomvia) *lamalito*. This is echoed in D713 **gil̦ʹU*''boy, young man'
65	RAIN	*ḥw.t*	ϩⲱⲟⲩ [hōu] (SABF)	No Afroasiatic cognates listed by Militarev but D2611 **χawV̄* 'stream, flow'. West Chadic Siryanchi *h*^{w}*í* 'rain', East Chadic Sumray *ʔo*
			ⲙⲟⲩⲛⲱϣⲓ [munōši] (B)	V127, V251 ⲙⲟⲩⲛⲱϣⲓ (SB) from *mw* + '*ḫy* 'lift' – i.e. 'water in the air', with wsi having the meaning of 'sky' – i.e. 'that which is suspended' - analogously mounhwou (SB), 'water of rain'. Also EII.51 in New Egyptian *mw nwp.t*
66	RED	*ṯr*, *dšr*	ⲧⲱⲣϣ [tōrš] (SA)	V369, V386 *dšr* (Pyramid texts) – E.V488 *ṯr* related by EHU to Proto-Afro-Asiatic **ma-kVr-* '(be) red'; Semitic **ma-kVr-* 'red', Akkadian *makrû* 'red spot', Arabic *makira* 'red' (cf. *karik* 'red' - poss. Loan word); Central Chadic **mV-kVl- (< *mV-kVr-)* 'red'. Schneider, cited in Peust 116 links to Semitic *ṣḥr* 'red, yellow', e.g. Arabic *ṣḥr* 'desert, Sahara' [idea of 'red land']. Notes Cf. Sem **krkm* 'yellow' and Afroasiatic **k*^{w}*ar-* 'black'
		ʾinś		'red, (blood)' EI.100 Proto-Afro-Asiatic **nVyas-* 'red'; Proto-Central Chadic **nyas-* 'red', Hwona *nyìs*
			ⲙⲏⲣϣ [mērš] (SB)	V121 'yellowish red'. V has ⲙⲣⲟϣ 'become red, yellow' < *mlš* 'mineral substance' (in Medical texts). Cf. 100 YELLOW. T3.444 – colour of a type of myrrh. No Afroasiatic cognates found.
67	ROAD	*wɜ.t*	ⲟⲩⲟⲉⲓ [uoei] (S), ⲟⲩⲟⲓ [uoi] (B), ⲟⲩⲁⲉⲓ [uaei], ⲟⲩⲁⲉⲓⲉ [uaeie] (L)	V231 Semantic shift from *wɜ.t* 'path, road' in Pyramid texts > ouoei, etc. 'step, path/seek/go to a place'. Proto-Afro-Asiatic **(ʔa-)wVr-*; Proto-Semitic **ʔurim-* (< **ʔury-am-*?) 'a big stone indicating a road in the desert', 'road', Arabic *ʔirm-* 'a big stone indicating a road in the desert', Mehri *wōrem*, def. pl. *ḥ-āyrēm*, Jibbali *ʔɔrm*, def. pl. *ḥ-āyrēm*, Harsusi *ḥ-ōrəm*, pl. *ḥ-áyrém*, Soqotri *ʔórim*; Proto-West Chadic **ʔaraw- ~ *war-*, Mupun *ár(è)*, Sura *ár*, Angas *ar*; Ankwe=Goemai *war*, Kulere *ʔáṛaw*; Proto-East Chadic **ʔVwr-*, Bidiya *ʔóorà*; Proto-High East Cushitic **ʔor-*, Bidiya *ʔóorà*; Proto-South Cushitic **ʔuruw-* 'path, way' Alagwa (Wasi) Gor *uruwa*; Omotic **wor-at-*. D2531a **wAŕV̄*
		See note	ⲙⲟⲉⲓⲧ [moeit] (S), ⲙⲱⲓⲧ [mōit] (B)	V109 < Demotic *myt* < Old Kingdom *mṯn* 'way', suggesting composite of a locative prefix *ma-* and *-yṯn* 'go, march' – i.e. place of going. EHU-Militarev derives *mṯn* from *mkl* and associates with Proto-Afro-Asiatic **kVl-* 'move, go', also cited as D869 **kalʹʔʹV̄* - I find the phonetic change too radical to be convincing.
		ḥr.t	ϩⲓⲛ [hin] (SLF), ϩⲓⲛ [hin], ϩⲓⲁ [hia] (F)	V289 < *ḥr.t* 'way' in Pyr. D2602a **χArV̄* 'tracks, path, way', e.g. Arabic ħār-at- 'quarter of a city consisting of several narrow streets, with only one entrances. Presumably related to *wɜ.t* above. Also V321 Akhimic form lo(A) < *ḫ3* 'way, path' New Egyptian (14-11BCE).
			ϩⲟⲟⲩⲧⲛ [houtē] (S), ϩⲟⲩⲧⲉⲛ [huten] (F)	V321, Č739 'way, path'(S), Černy derives from *ḥfḏn* 'rise (19th Dyn. - a Semitic loan), but V. not convinced.
68	ROOT	*wɜb*		Probable initial meaning 'medical plant'. Not attested in

				Coptic. Proto-Afro-Asiatic **ʔabaw/y-* 'kind of plant'; Proto-Semitic **ʔabVw-* 'reed, papyrus', Akkadian *ab/pu*, Hebrew *ʔēbā̄*, Arabic *ʔabāʔ-*; Proto-Central Chadic **ʔabay*, 'leaf', Glavda *ā̆bàya.*
			ⲛⲟⲩⲛⲉ [nune] (SA), ⲛⲟⲩⲛⲓ [nuni] (BF)	V143 < Demotic *nn.t* < Medical texts *mnj.t* (EII.77) (Certainly since the 18th Dyn.(16-14 BCE)). V suggests that it is a verbal construct 'what remains (in the earth)' – despite phonological difficulties of explaining m > n, in which case, it simply derives from D1420 **mäña* 'remain, stay' with Old Egyptian *mn* > Coptic ⲙⲟⲩⲛ [mun]. T3.262 < *mlj.t,* cognate with Central Chadic Paduko *mílil* 'root of tree', Hitkala *mala* 'vein'
69	ROUND	*dbn*		'ring, round box' - EV.436 - Not attested in Coptic. Semitic **dVbVl-* 'cake of figs' 1, 'make into balls' 2, 'clump' 3, 'round' 4, Ugaritic *dblt* 'cake of figs', Hebrew *dəbēlā* 'cake of figs' (*dəbēlīm ʕiggūlīm* 'round-shaped'), Judaic Aramaic *dibēlət-* 'cake of figs' Arabic *dbl* 'make into balls', *dublat-* 'clump', Amharic *dəbulbul* ('unused') 'round' Baet, Harari *dulālu* 'round'; Beḍauye (Beja) *debāl* round; Omotic **dVbVl-* (?) 'round', Ometo Male *dulaʔo (<*dVwVl- <*dVbVl-?).*
		šny	ϣⲓⲛⲉ [šine], ϣⲛⲧ [šnt] (S), ϣⲓⲛⲓ [šini] (B), ϣⲉⲛ- [šen-] (SB)	V265, EIV.489 Semantic shift from *šny* in Pyr. 'be round, encircle, embrace' to 'ask, question, greet'. Also EIV.491 *šnw* 'circle' since 18th dyn. Parallel to Vulgar Latin *circare* 'turn around' to French *chercher*, Italian *cercare* 'seek'. Proto-Afro-Asiatic **čVyan-* (?) 'encircle'; Proto-West Chadic **čyan-* 'encircle, surround', Angas *čen*; Proto-East Chadic **sVn-* 'close, cover', Tumak *sə̄n*
			ⲕⲉⲗⲕⲱⲗ [kelkōl] (S)	Clearly related to universal root, as attested in D1053, **ḳol̄yV̄* 'round, turn, turn around' > general IE words for wheel (Actual Coptic word for wheel is kot (SB), kat (SA) (V76) – presumably related to klal (S), ,lal (B) 'necklace, chain', 'ball') – no form *kll* attested in Egyptian, but Beja *kŭlēl* 'circle, around', Nubian *kulal* 'ring' – could be Semitic borrowing. Note reduplication in Hausa *ḳʷálā̆-ḳʷálā̆* 'large and round'.
70	SAND	*šʿy*	ϣⲱ [šō] (S), ϣⲟⲩⲟⲩ [šuu] (S),	V255 (in Pyramid text) (EIV.419) and *šʿ* (EIV.419) Proto-Afro-Asiatic **ĉVʕ-* 'sand'; Proto-West Chadic **Syay-/ *SyaH-* 'sand', Boghom *šey*, *šē*; Omotic Mao *šáo*, Shinashsha *siya*, Dime *šayi*
71	SAY	*ḏd*	ϫⲱ [ʒō] (SB), ϫⲟⲩ [ʒu] (A), ϫⲉ- [ʒe] (SBALF), ϫⲓ [ʒi] (SAF)	V323, Cr754 'say' < *ḏd* 'say' (Pyramid texts) (EV.618) Also D168, Cr285 ⲡⲉϫⲉ [peʒe] (SB), ⲡⲁϫⲉ [paʒe] (AL), ⲡⲉⲧϣⲁ-, ⲡⲉϣⲁ- [petša-, peša-] (O), where the initial ⲡ- is just a pronoun 'what has been said' and D278, Cr613, ϣⲁϫⲉ [šaʒe] (S), ϣⲉϫⲉ [šeʒe] (SAL), ϣⲉϫⲓ- [šeʒi-] (F) - causative prefix ϣ- T1.255 Agaw Qwara *gudò*, Somali *yēd-*, West Chadic Mupun *kát può* 'discuss with', Central Chadic Nzangi *gwad* 'to say, speak'.
		k3		EV.85 – survived into Greek times, also as compound *ḏd-k3* Proto-Afro-Asiatic **kaw/ʔ/ʕ-* 'say, shout'; Proto-West Chadic **kuw-* 'cry, shout' (n.), 'shouting', 'cry, sob', Hausa *kū̆wà* 'cry, shout', Dera=Kanakuru *kū̆wú* 'shouting', Bokos *kawa* 'cry, sob'; Proto-Central Chadic **kaH-* 'say', 'call', 'cry', Higi Futu *ka-̀šo* 'call', Higi Baza *kù-ka* 'call', Higi Nkafa *kā̃-ta* 'call', Higi Ghye *kà-žὲ* 'call', Malgwa *kyúwa* 'cry', Logone *ká* 'say'; Proto-East Chadic **kaH/w-* 'say', 'speak', Tumak *kā* 'say' Dangla

				kăwe 'speak', Mubi *kă* 'say'; Proto-Central Cushitic (Agaw) **kuy-* 'emit sounds', Proto-Agaw **kuy-* 'emit sounds', Awiya (Aungi) *koy-ŋ*; Proto-South Cushitic **kaw-* 'tell', Burunge (Mbulungi) *kaw-*; Dahalo (Sanye) *kaaʕ-* 'shout'.
		ʾin		EI.89 Since Pyramid texts, in sense of 'quoth he'. Seems to have disappeared by late period. Proto-Afro-Asiatic **y/ʔan-* 'speak'; Proto-Berber **yannaw* 'say', Ghadames *en*, Senhadja *ini*, Ayr *ănnu*, Ahaggar (Tahaggart) *ənn*, Zenaga *ənnəh*, Semlal *ini*, Izdeg *ini*, Iznassen *ini*, Shenwa *ini*, Qabyle (Ayt Mangellat) *ini*; Proto-West Chadic **ʔan-* 'speak', Ngamo *ana*; Proto-Central Chadic **ʔi/an-* 'speak', Peve *in*; Proto-East Chadic **ʔan-* 'speak', Kwang *ànè* 'speak', Dangla *áné* 'speak'; Beḍauye (Beja) *an-* 'say'; Central Cushitic (Agaw) Awngi *nəŋ*; Proto-Warazi (Dullay) **yan-* 'say', Dihina *iyanna* Notes Related to Sem **ʔVn-* 'moan' (Arab *ʔnn* and the like)?
		ḫr	ϩⲣⲟⲟⲩ [hrou] (SL), ϧⲣⲱⲟⲩ [χrōu] (B), ⳉⲣⲁⲩ [$\chi_2$praw] (A), ϩⲣⲁⲩ [hraw] (F)	V311, EIII.25 'say' in Pyr. > 'voice, noise' in Coptic Proto-Afro-Asiatic **q^war-* or **qVwar-* 'voice, call, cry'; Proto-Semitic *ḫVwVr-* 'bellow (v.)', Arabic *h_wr*; Proto-Berber **kur-* 'call', Ahaggar (Tahaggart) *kur-ət* 'voice, noise', *ḫr* (OK) 'say'; Proto-West Chadic **qwar-* 'scream, cry' (n.), 'groan', 'shout, call', Hausa *kùrūruwà* 'scream, cry', Angas *gwar* 'groan', Ankwe=Goemai *gweer* 'groan', Kariya *kwar* 'shout, call' , Miya *kwar* 'shout, call', Jimbin *gwar-al* 'shout, call'; Proto-Central Chadic **k/ḥwar-* 'voice', Malgwa *kwara*, Zime-Batna *ḥòr*; Proto-East Chadic **kur-* 'cry to call a dog', Dangla *kùrè*; Proto-South Cushitic **ḫur-* 'rumble, roar', Iraqw (Mbulu) *ḫur-ay*.
		ʾiw		EI.43 – related to verb 'to be' – appears in New Kingdom. Proto-Afro-Asiatic **ya-/*yi-* 'call, speak, saying'; Proto-West Chadic **yV-* 'call', Pero *yő*; Proto-Central Chadic **ya-* 'call', 'say', Musgu *yi* 'call', Masa *yu-mo* 'call', *ya*, Banana *ya-mu* 'call'; Proto-East Chadic **yV-* 'call', 'say', Gabri *yé* 'call'; Proto-Central Cushitic (Agaw) **yV-* 'say', Khamir *y(i)-*, Khamta *y-*, Qwara *y-*, Dembea *y-*, Qemant *y-*; Proto-Saho-Afar **ya-/*yi-* 'say', Saho *yä-*, *ii-*, Afar (Danakil) *ii(y)-*; Proto-Low East Cushitic **ya-* 'say', 'shout', Somali *ii-* 'say', Oromo (Galla) *iyya* 'shout', Dasenech (Geleba) *y-* 'say'; Proto-High East Cushitic **yV-* 'say', Sidamo *i-*, *y-*, Hadiya (Gudella) *y(i)-*, Alaba *i-*, *yii-*, Burji (Bambala, Dashe) *i-*, *y-*, Kambatta *y(i)-*; Proto-South Cushitic **yV-* 'say', Burunge (Mbulungi) *yɔ*; Proto-Omotic **yV-* 'say', Ometo *y-*, Kafa (Kaficho) *y-*.
72	SEE	*m33*		EII.7 Proto-Afro-Asiatic **mVrVʔ/ʕ-* 'see, look', Proto-Semitic **ʔVmVr-* 'see' (met.), Akkadian *amāru*, Ugaritic *ʔamr* 'contemplar', Phoenician *ʔmr* Epigraphic South Arabian Sabaean *ʔmr* 'sign, oracle', Geʕez (Ethiopian) *ʔammara* 'show, indicate, tell, make a sign, make known', *ʔaʔmara* 'know', Tigre *ʔamärä* 'know, understand', Tigrai (Tigriñña) *ʔammärä* 'show', Amharic *ammärä* 'show, indicate'; Proto-Central Chadic **mara* 'show', Malgwa *mára*; Proto-East Chadic **myar-* 'look, peer', Bidiya *mer*; Proto-Central Cushitic (Agaw) **mirriʕ-* 'look, watch', Bilin *miliʕ y-*; Proto-Low East Cushitic **mariʔ-*, Oromo (Galla) *mariʔ-aḍḍa*
				b3ḳ E1.426 'perceive, see' – only attested in Late Literary

				Egyptian Proto-Afro-Asiatic _*bVḳ/k-_ 'look, see', Proto-Semitic _*bVḳ-_ 'examine, observe, look at', 'search, investigate, find out', Judaic Aramaic *bqʔ* 'examine, observe, look at', 'search, investigate, find out', Arabic *bqw/y* 'examine, observe, look at'; Proto-West Chadic _*bVḳ-_ 'looking after, tending carefully', 'look for', Hausa *bi̋ḳì* 'looking after, tending carefully', Mangas *bùk* 'look for', Boghom *ḅaγ-oŋ* 'look for'; Proto-Low East Cushitic _*beḳ/k-_ 'observe', 'know', Somali *beeq-* 'observe', Oromo (Galla) *beeka* 'know'; Proto-High East Cushitic _*bek-_ 'know', Burji (Bambala, Dashe) *beeh-*, *beek-*; Proto-Omotic _*baḳ-/*beḳ-_ 'see', 'know', Ometo *biḳ-* 'see', Kafa (Kaficho) *beḳḳ-* 'know', Mocha *bäḳḳi-* 'see', Anfillo (Southern Mao) *beḳ-* 'see', Bworo (Shinasha) *beḳ-* 'see', Gimirra (Benesho, She) *beḳ-*, *bek-* 'see'.
		dgj		EV.497 Proto-Afro-Asiatic _*dVg^{w}Vl-_ 'look, see', Proto-Semitic _*dVgVl-_ 'look' ~ *digl- 'eyesight; view; sign', Akkadian *dagālu* 'look'; *diglu* 'eyesight; view', Hebrew *dägäl* 'sign; banner'; *dāgūl* 'visible', Syrian Aramaic *dgl* 'contemplate, examine'
			ⲛⲁⲩ [naw] (SB), ⲛⲉⲩ [new] (FL), ⲛⲟ [no] (AL),	V144, V147 < *nw* 'see' attested since 18th Dyn. Proto-Afro-Asiatic _*naʔ-/*naw-/*nay-_ 'see'; Proto-Berber _*(H)innay-_ 'see', Ghat *əni*, Ayr *ənəy*, Ahaggar (Tahaggart) *əni*, Tawllemmet *ənəy*, Taneslemt *ənh*, Adghaq *ənhi*, Izdeg *inni*, Izayan *anni*; Proto-West Chadic _*naH-_ 'see', Mupun *náa*, Sura *náa*, Angas *ne*, Chip *náa*, Karekare *n-*, Kifri=Giwo *nee-*, Gera *nêe-*, Galambu *ny-*, Geruma *née*, Warji *nah-*, Kariya nahə, Miya *nay-*, Mburku *naγ-*; Proto-Central Chadic _*nV-_ 'see', Tera na, Gaanda *ànni*, Gabin *ni*, Hwona *nà-ḍən*, Mandara=Wandala *nan*, Malgwa *ná*, Nzangi *nan*, Bachama *ná*, Bata *nan*, *nī*; Proto-Low East Cushitic _*nay-_ 'learn', Arbore *nay-* D1549 _*näḲ̦V̦hê_ 'see, perceive'/D1630 _*ńʼEχa_ 'to see'.
		'ir	ⲉⲓⲱⲣϩ [eiōrh] (S), ⲓⲱⲣϩ [iōrh] (B)	V67 -Coptic meanings 'see, perceive' < 'to eye sthg.' cf. 25 EYE D27 _*ˀīlV_ 'eye'
				III.271 *ḫty* in the Book of the Dead Proto-Afro-Asiatic _*ḫVyVṭ-_, 'see, watch', Proto-Semitic _*ḫVyVṭ-_ 'observe', Akkadian *ḫiātu*. D1891 *qʹiʼtV* 'appear, become visible' – Nostratic entry, albeit with no Afroasiatic entries other than Egyptian.
		ptr	ⲫⲉⲣ [p^{h}er] (S), ⲫⲱⲣ [p^{h}ōr] (B)	V163 Pyramid texts *ptr* 'to see' > Greek *p3* > Demotic *pry* 'see in a dream, dream'. T2529-531, Semitic Hebrew *ptr* 'set forth, mean (of dreams), Mehri *báttər*, Berber Shilha *bader* 'to keep under surveillance'.
73	SEED	*pry-t*	ⲉⲃⲣⲁ [ebra] (S), ⲃⲣⲁⲓ [brai] (B)	V39 – many different forms D1761 _*p̧ʹeʼrV_ 'fruit'/D1773 **P_Ar̦ʔ̦V* 'bring forth' Possibly from *pr.t* 'fruit' in Old Egyptian, related to *prt* 'come out', but V. says hard to explain shift of *p > b*. Present in Demotic as *pr m* 'grain, wheat' (V39). Militarev suggests unrelated, but this seems unlikely. Proto-Afro-Asiatic _*pi/ar-_ 'fruit, corn', Proto-Semitic _*pir-_ 'fruit', Ugaritic *pr*, Phoenician *pr*, Hebrew *pərī*, Aramaic *pēr-*, Geʕez (Ethiopian) *fəre*, Harari *fəri* 'seed'; Proto- Berber _*far-_ 'corn', Canarian *a-faro*; Proto- West Chadic _*par-par-_ 'k. of guinea corn', Hausa *fár-fárā̋*; Proto- Central Cushitic (Agaw) _*fir-_ 'fruit' 1, 'corn' 2, Bilin *fir* 'fruit', Khamir *fira* 'fruit', Qwara *fira* 'fruit',

				Dembea *fira* 'fruit', Qemant *fir* 'corn'; Proto-Saho-Afar **fir-* 'flowers, fruit', Saho fire; Proto- Low East Cushitic **fir-* 'fruit', Oromo (Galla) *firi* NB: Saho-Afar may otherwise relate to **pu/ar-* 'flower, grass'. **Related forms** ***pry* (Pyramid texts)** ⲫⲉⲗ (B) – 'bean' Proto-Afro-Asiatic *pal- 'corn, bean', Proto- Semitic **pūl-*, Hebrew *pōl*, Arabic *fūl-*; Proto-Central Chadic **PVl-* 'seed', Mulwi Muktele *fáfəlù* Notes Very likely a Semitism. D also lists under D1761 **p̣'eˀrV̄* ***Npry* (Pyramid texts)** V144 *npry* 'wheat' in Pyr > Coptic 'grain' *npy*
		sṯy	ⲥⲓϯ [siti] (B)	V198 - Associated with cite 'throw, sow, distribute' (S) < Demotic *sty* 'throw' < *sṯy* 'to sow, spread' in Pyr. D463 **ĉatV̄* 'to separate, scatter' – General Afroasiatic root *ŝtt*
74	SIT	*ḥmsy*	ϩⲙⲟⲟⲥ [hmoos] (S), ϩⲉⲙⲥⲓ [hemsi] (B), ϩⲙⲉⲥ [hmes] (AL), ϩⲙⲁⲁⲥ [hmaas] (LF), ϩⲙⲟⲥⲧ [hmost] (SAB), ϩⲙⲁⲥⲧ [hmast] (ALP), ϩⲉⲙⲁⲥⲧ [hmast] (F)	V302 'sit, be sitting' < *ḥmsy* 'sit, be sitting' (Pyramid texts) T1.43 Saho *kamas* 'sit'; PWKuliak *gemec*
		gr	ϩⲱⲣⲕ [hōrk], ϩⲁⲣⲕ [hark] (S)	Cr702 < *gr* (Pyr. 'stillness, silence') Link to D1942 **qV̄RV̄śV̄* 'become silent' – general Semitic root for 'deaf'/'dumb' Akkadian *(?) h_arāšu 'to be dumb?'*, Hebrew *ḥrš 'to be deaf'*, Arabic *h_rs 'être muet'*
		(ṯs)		EV.410 *ṯs* 'sit' – Middle Kingdom – Form *tjś* documented until Ptolemaic times but not attested in Coptic. Cognate with Proto-Afro-Asiatic **tis-* 'sit'; Proto-West Chadic **tVs-* 'sit', 'put down', Tala *təsù* 'sit', Sha *təs* 'put down'.
75	SKIN	*'inm*	ⲁⲛⲟⲙ [anom] (B)	V12-13 'skin of the body' V rejects link to Berber *ilem* 'skin, leather' (Ghadames *īləm*, Sokna *iləm*, Siwa *îləm*, Ghat *iləm*, Ayr *elăm*, Ahaggar (Tahaggart) *eləm*, Ntifa *iləm*, Baamrani *iləm*, Rif *irm*, Iznassen *îləm*, Snus *iləm*) but Militarev accepts it and adds Proto-West Chadic **ʔalm-Vn- ~ *lamoʔ-* 'hide', 'to skin', Bokos *lamoʔ* 'to skin' Sha *lamoʔ* 'to skin', Daffo-Butura *lamoʔ* 'to skin', Bade *almən* 'hide'
		ẖ'r	ϣⲁⲁⲣ [šaar], ϣⲁⲣ [šar], ϣⲁⲁⲣⲉ [šaare] (S), ⳉⲁⲁⲣⲉ [$\chi_2$aare] (A), ϣⲉⲉⲗ [šeel] (F)	V269 Confusing. V269 *ẖ'r* attested in Greek period as 'leather' > Coptic 'skin, leather, bag, covering', but also agrees with D295 **ćeľê 'to* peel' – which suggests an Afroasiatic root *sl*. Fayummic form could be Semitic borrowing (e.g. Biblical Hebrew *šelaħ* 'hide') although Central Chadic forms Bachama *šiláré*, Mwulyen *šìra*, Bata-Garua [Mch.] *ší rẹ* . EHU-Militarev has Proto-Afro-Asiatic **ɣʷar-* 'skin', Semitic **ɣa/ur-/*ɣarɣar-* 'skin, dewlap', Phoenician **ʕr*, Hebrew *ʕōr* 'skin, leather', Arabic *ɣarɣar-at-, ɣurɣur-at-* 'gizzard'; cf. *ɣarr-at-, ɣurr-at-* 'fold (of skin, fabric)', Mehri *ɣərɣār*, ɣərɣərōt 'side of throat', Jibbali *ɣɔrɣɔ́rɔ́t, ɣarɣɔ́rɔ́t* 'dewlap; Central Chadic *Har- 'skin', 'to skin', Malgwa *hə́ra* 'to skin' , Gisiga *garak* 'skin' (?); East Chadic **gVr-* 'skin', 'egg-shell, bark', Somrai *gàré* 'skin', Ndam *gəré* 'skin', Mokilko *gúŋgùrú* < **gu-ngur-* 'egg-shell, bark'; Low East

				Cushitic **ḳur-* 'skin', Elmolo *úrat*; Warazi (Dullay) **ḳʷVr-* 'skin', Tsamay (Dume, Gaba, Kule) *qúur-o*. The most obvious conclusion is that there are 2 related roots, reflected in Coptic *šaar* and *haar-e* both of which are preserved in Coptic, with possible loan from Semitic to Fayumic.
			ϣⲁⲁⲃ [šaab], ϣⲁⲁϥ [šaaf], ϣⲟⲟⲃ [šoob] (S)	V256, Cr 550 *ḫ3f* attested in ME as name of a dog > Coptic 'skin, fur' No immediately obvious Afroasiatic cognates.
		mśk		EII.150), compared with Akkadian *mašku*, Arabic *mašr-at-* 'clothes' – D1491 cites **meʔiŝV* 'hide' but thinks that *msḳ* has a different origin, although cognate with Beja *mesik* 'hide of an animal'.
		ntnt, ntt		EII.356 *ntnt* 'skin' in Medical texts, *ntt* in Late Egyptian/Graeco-Roman period 'body skin'. Clearly a survival from Proto-Afro-Asiatic **lat-* (?) 'skin', Egyptian ntnt (< **lVtlVt?*) 'skin' (med), West Chadic **lat-* 'skin', 'loin cloth, leather', 'loin-cloth', Polchi *latə* 'loin cloth, leather', Geji *laati* 'loin-cloth', Zaar *láat* 'skin', Sayanchi *laatə* 'loin cloth, leather', Buli *lát* 'loin cloth, leather', Zul *laati* 'loin cloth, leather' And associated with D1334 **L'a'ṭV* 'skin, leather, bark' (ultimately related to IE words for 'leather').
				dḥr ('skin' Middle Kingdom) – Not attested in Coptic Proto-Afro-Asiatic **daḥVr-* (?) 'skin'; Proto-West Chadic **[n]dar-Vm- / *HVdar-m-* 'bark', Mupun *drè-m təŋ* 'bark of a tree', Sura *dəra-m*, Angas *dar-m, ndar-m*; Proto-East Chadic **dar-* 'skin', 'bark, cork', Tumak *dar* 'skin', Mokilko *dár* 'bark, cork'. D2298 **toŕV* 'bark, remove bark, peel'
76	SLEEP	*ʿwn*		In Pyramid texts, not attested in Coptic. D137 **ʕ'umŋ/ñV* 'sleep, lose consciousness', D links to D64 **ʕ'üu'q'yê* 'night, dark' Proto-Afro-Asiatic **wiʕan-* 'sleep', also in Central Chadic **[w]iyan-* 'sleep' Gaanda *ìyena*, Gudu *wìye~nu~*, Cf. **xVn-*; East Chadic **wyaHan-* 'to sleep', 'dream', 'to dream', Kwang *wéŋ* 'to sleep', Migama *wáànò* 'to dream', *wáànì* 'dream' pl.
		ʿwy, ʿʿw		EI.169 'sleep' – Middle Kingdom D157 **'ʕaw'oy'V* 'spend the night, sleep', Omotic **way?* 'sleep, lie down', linked to D64 'night' and to D1650 (see entry below for *'ib3n*)
		ḳd	ⲕⲁⲧⲉ [kate] (O), ⲕⲓⲧⲉ [kite] (S)	V89 'sleep'. Also ⲛⲕⲟⲧⲕ 'sleep, fall asleep' < *nḳdd* 'sleep', from Middle Egyptian, 19th Dyn. D1221 **Ḳey,a,tV* 'to fall' East Chadic Kwang *kódam* 'lie', S Cushitic Kwadza *ḳat-* 'lie down, sleep', present in Semitic e.g. Akkadian *maḳātu* 'collapse, fall to the ground' – same root as IE 'fall' in Latin, *cadō* 'I fall'.
		nmʕ	ϩⲓⲛⲏⲃ [hinēb] (SAF), ϩⲓⲛⲏϥ [hinēf] (SF), ϩⲓⲛⲓⲙ [hinim] (B)	< Amarna period (c. 1350-1290 BCE) *nm'* 'sleep' D1605 **ńuŋV* 'slumber, sleep', D1650 **ŋuhy'a'* 'rest, lie, repose (linked to D157 – see *'w* above. Proto-Afro-Asiatic **nVwVm-* 'sleep', Proto-Semitic **nVwVm-* 'to sleep, slumber', Akkadian *nâmu* 'to slumber', Ugaritic *nhmmt* 'sleep of death', Hebrew *nwm* 'to slumber, to be drowsy', Aramaic *nhm* 'he slept', Judaic Aramaic *nwm* 'to slumber, to sleep'; Mandaic Aramaic *num* 'to sleep', Arabic *nwm* 'dormir', Geʕez (Ethiopian) *noma* 'to sleep'; Proto-East Chadic **nun-* (< **num-?)* 'sleep' ~ **mVwVn-* (met.) 'to sleep', Somrai *nùnii* 'sleep', *nūnī* 'sleep', Tumak *əŋ-nùn* 'to sleep', Ndam

				ʔə́ǯá nūn 'to sleep'.
		'ib3n		*'ib3n* 'to sleep' in Pyramid texts. Not attested in Coptic. Proto-Afro-Asiatic **ʔiban-* 'sleep', Proto-Central Chadic **HVbyan-* 'dream', Boka *ḅwèni*, Hwona *ḅèna*, Fali Muchella *bān* 'dream'
77	SMALL	*nḏś*		EII.384, in Pyr., not attested in Coptic Proto-Afro-Asiatic **gus-* 'be small', Proto-Central Chadic **gusu-* 'short', Higi Futu gùsi, Higi Baza (ta)gùsu(nà), Fali Kiria *gwusuʔ*, Gude *gúsə*, Nzangi *gus*, Fali Jilvu *gwùs*, in which case, could be distantly related to *kūy* below.
			ⲕⲟⲩⲓ [kui] (SALFO), ⲕⲟⲩϫⲓ [kuʒi] (B)	V73 ⲕⲟⲩⲓ < Demotic *ky*, V cites Vergote as deriving from Pyr. *g3y* 'narrow', but says that *g* > *t* is a very rare phonetic change. V92 kouji < *kt* 'small' (Middle Kingdom). Proto-Afro-Asiatic **k(^{w})at-* 'be small'; Proto-Semitic **kVt-* 'weak', Akkadian *katû*; Proto-West Chadic **kat-* 'small', 'decrease, diminish' ~ **kat-* ~ **kwit-* 'small, narrow', Mupun *kāt* 'small', Sura *kát* 'small', Angas *kwīt* 'narrow', Tangale *katɛ* 'decrease, diminish'; Proto-Central Chadic **kwati-* 'small', Mofu-Gudur Mafa *kwiteʔe*. Related to D1227 **ḳUṭV* 'small', D693 **gûˁ'ṭḤ̦V* 'small, little'
		šr	ϣⲓⲣⲉ [šire] (S), ϣⲓⲣⲓ [širi] (B), ϣⲏⲗⲓ [šēli] (F), ϣⲁⲣ- [šar-] (SB)	V269 *šr* 'small', *šrr* 'be small' in Pyramid texts > 'son' in Coptic. Presumably related to D360 **ç̣'û 'grV* 'be small, diminish', but D only gives Semitic etymologies.
			ϣⲏⲙ [šēm] (SB)	V262 has Coptic 'few, small' < Demotic *ẖm* 'be small'– linked to *ẖm* 'not knowing' – in the sense of a child not knowing, but it seems more likely to me that the word is linked to *ẖns* 'narrow', attested since the NK, since in the Pyramid texts, we have *šm*^{c}*w* 'Upper Egypt', in the sense of 'the narrow land', as opposed to the 'wide land' of the Delta, in which the shift from *n* to *m* has already occurred[31]. Poss. Link to D2407 **Xü'w'ïñCV/*X'ü'ñCV* 'thin, narrow', present in East Chadic, with semantic association between 'narrow' and 'small'. Possible Afroasiatic cognates.
			ⲥⲃⲟⲕ [sbok] (SB), ⲥⲃⲁⲕ [sbak] (AF), ⲥⲟⲃⲕ [sobk] (SB)	V184, E422.7 'become small, be few' < Demotic *sbḳ* 'be small' ~link to *śb* 'cut' (Middle Kingdom) in sense of 'cut down'? OS2168 *sa'ab* 'cut', in West and East Chadic.
		gby	ϫⲁⲃϫⲓⲃ [ʒabʒib] (B)	V324, Cr. 760 'small in stature' < *gby* 'be weak, feeble', in Pyramid texts. Proto-Afro-Asiatic **gabVḥ-*, 'be weak'; Proto-Semitic **gVbVḥ-* 'be weak', 'soften', Syrian Aramaic *gāwiḥ* 'be weak', Tigre *gäbḥä* 'soften', Tigrai (Tigriñña) *gäbḥe* 'soften'; Proto-Central Chadic **gaḅ-* 'sickness', Lame *gáḅá*, Peve *gaḅ*, Mesme *gab*; Proto-Low East Cushitic **ga-gab-* 'be exhausted', Oromo (Galla) *gaggaba*
78	SMOKE	*hṭy*		Pyramid texts – more in sense of 'smoke from burnt offering' – appears to be linked to words for 'sacrificial victim' – hence, not primarily smoke (EIII182). Possible link to D977a **kuẑmV* 'smoke, ashes', D1219 **ḲotV* 'smoke', with many Semitic cognates meaning 'burnt offering'.
		ḳrr	ⲕⲣⲙⲧⲥ [krmts],	V86 < Demotic *ḳrm* 'smoke', *ḳrmts* 'darkness, fog' <

---

[31] The presence of *š* in Old Egyptian may appear to be anachronistic, but is perfectly plausible in phonological terms, cf. Peust, p. 116, who explains that *ẖ* was written as *š* in the Old Kingdom.

			ⲕⲱⲣⲙ [kōrm] (S), ⲭⲣⲉⲙⲧⲥ [χremts] (B) No entry for F	Pyramid texts *ḳrr* ‘to burn pots’ – confirmed in EHU-Militarev. D1041 **ḲE'ɣ|ʔ'aḷa* ‘to burn’ or link to **ḳarH*$_2$ ‘burn, heat’. Presumably also associated with ϭⲱⲣ [kōr] (Cr 827) cf. 2 ASHES
79	STAND	*‘ḥ‘*	ⲱϩⲉ [ōhe] (S), ⲟϩⲓ [ōhi] (B)	V252 ‘stand, wait, remain’ < *ḥ‘* ‘stand’ (Pyramid texts) Proto-Afro-Asiatic **ḥaʕ-/*ḥuʕ-* ‘stand up, climb, move upwards’; Proto- West Chadic **Haʔ-* ‘raise’, ‘mount, climb’, Hausa *háu* ‘mount, climb’, Bokos *haʔ* ‘raise’; Proto-Central Chadic **xuʔ/*xay-* ‘lift’, ‘stand up’, ‘climb (a tree)’, Kilba *hű* ‘lift’, Margi *xù´* ‘lift’, Munjuk *hi* ‘climb (a tree)’, Buduma=Yedina *hai* ‘stand up’; Proto-East Chadic **ʔu-* ‘lift’, Somrai *ʔu.*
80	STAR	*śb3*	ⲥⲓⲟⲩ [siu] (S), ⲥⲟⲩ- [su-] (S), ⲥⲓⲩ, ⲥⲉⲩ [siw, sew] (Pl.) (F)	V200 *sb3* ‘star’ (Pyr.) > *sw* ‘star’ – V also links to ‘illumination, enlightenment’. Proto-Afro-Asiatic **suhw-* ‘star’; Proto-Semitic **šuh-* ‘star in Ursa Major’, Arabic *suh-*; Proto-West Chadic **sasuw-* ‘star’, Warji *šušuw-ai*, Kariya *šušu*, Miya *asuwašu*, Pa’a *šašuwa*, Cagu *šišiwi*, Mburku *šašuwi*, Jimbin sasuwa; Proto-East Chadic **sya-sV-* ‘star’, Sokoro *sɛ́sù.*
		ḥrj.w		EIII.142 (Pyr.) ‘stars in general’ Proto-Afro-Asiatic **ḥir-* ‘star’; Proto-East Chadic **hyar-* ‘star’, Tumak *hērú*; Proto-Low East Cushitic **ḥir-* ‘light of sun or moon’, Arbore *hiiro*
		(gnḫ.t)		EV.177 *gnḫ.t* ‘star’ from Middle Kingdom onwards - Possible cognate with Proto-West Chadic **ngaĉ-* ‘star’, Buli *ŋgaŝ* ‘star’, Kir *ŋgaŝ* ‘star’, Tala *ŋgaŝ* ‘star’. Other West & Central Chadic cognates under D1100 **ḲuńǯV.*
81	STONE	*‘inr*	ⲱⲛⲉ [ōne] (SALF), ⲱⲛⲓ [ōni] (BF), ⲉⲛⲉ [ene] (S), ⲁⲛⲁ [ana] (BF)	V249, Cr524 Proto-Afro-Asiatic **naw/yl/r-* ‘stone’; Proto-Semitic **nawr- ~ *narw-* ‘stone monument’, ‘boundary stone’, ‘chalk’, Akkadian *narû* ‘stone monument’, Geʕez (Ethiopian) *norā* ‘chalk’ (<Arabic *nūra*?), Tigre *norät* ‘chalk’, Tigrai (Tigriñña) *nora* ‘chalk’, Amharic *nora* ‘chalk’, Gurage *nora* ‘chalk’; Proto-West Chadic **laHar-/*laar* ‘rock’, ‘stone’, ‘boulder’, ‘hailstone’, Mupun *lāar* ‘boulder’, *llőr* ‘hailstone’, Sura *lar* ‘rock’, ‘stone’, Angas ler ‘rock’; Proto-Omotic **nVyal-* ‘stone’, Dime *laalo.* Notes Dizi *nyalu*, Bencho *niyl*, Naa *nyelu*
		‘3t		EI.165 *‘3t* ‘stone’ Proto-Afro-Asiatic **ɣaʔ-* ‘stone’; Berber **tV-ɣoɣ-* ‘stone’; Proto-West Chadic **ɣayi-/*ɣaw-* ‘rock, stone’, Gera *gììwí*, Galambu *gìgaí*, Geruma *gìí*; Proto-Central Chadic **xwaʔ-* ‘mountain’, ‘stone’, Lamang *xwá* ‘mountain’, Dghwede=Zəɣwana *xwaʔà* ‘mountain’, Mandara=Wandala *wua* ‘mountain’, Glavda *ɣwà* ‘mountain’
82	SUN	*r’*	ⲣⲏ [rē] (SBO), ⲣⲉ [re] (FO), ⲣⲉⲓ, ⲣⲓ [rei, re] (A), ϧⲛⲓ [χni] (BO)	V170, Cr287 Proto-Afro-Asiatic **raʕ-* ‘sun, god’; Proto-Semitic **rayʕ-* ‘daylight’, Arabic *rayʕ-*; Proto-West Chadic **(*ʔa-)riʔ-* ‘sky’, ‘cloud’, Geji *rii, lii*, Bokos *riʔ* ‘cloud’, Sha *are* ‘sky’, ‘cloud’, Daffo-Butura *riʔ* ‘cloud’; Proto-East Chadic **raH-* ‘god’, ‘sky’, Bidiya *rāyà* ‘god’, Mokilko *rā́* ‘god’, sky’.
		‘itn		EI.145 first attested in Middle Kingdom Old Egyptian *ỉtn* (Middle Egyptian) Proto-Afro-Asiatic **yatin-/*ʔetin-*, ‘day, sun’; Proto-East Chadic **(ʔ)yatin-H-* ‘day’, Jegu *ʔétìŋ*

				šw EIV.430 first attested in Middle Kingdom Proto-Afro-Asiatic **ŝVw-* 'light (n.)'; Proto-Semitic **ŝxVw-* 'south (wind)', Akkadian *šūtu*; Proto-Central Chadic **(ʔa-)ẑVw-* 'lightning', Mada *áwẑá* 'shine', Mafa=Matakam *ẑáẑáy* 'shine', Daba *àžəw*
		wn (see text)	ⲟⲩⲟⲉⲓⲛ [uoein] (S), ⲟⲩⲱⲓⲛⲓ [uōini] (B)	V231 First attested in Greek times meaning 'sun', but V links to *wn* 'open' – attested since Pyr. Texts. Proto-Afro-Asiatic **wan-/*wun-*, 'day, sun'; Proto-West Chadic **wun-* 'day (from sunrise to sunset)', 'day (24 hours)', Hausa *wúnì* 'day (from sunrise to sunset)', Ngizim *wùnà* 'day (24 hours)'; Proto-Central Chadic **wan-H-* 'day', Daba *wān*, Musgoy *waŋ*; Proto-East Chadic **wan/Vy/-* 'day', Tobanga (=Gabri Nord) *wole*, Mokilko *ʔònìyó*.
83	SWIM	*nby*	ⲛⲉⲉⲃⲉ [neebe] (S), ⲛⲉⲃⲓ [nebi] (B)	V139 < Pyramid texts *nby* 'swim' Proto-Afro-Asiatic **nVbVy-* 'swim'; Proto-Central Chadic **nyabi-* 'swim' Gulfey *nebia, nambia*; Omotic Cf. Iraqw *tumb-īm*
			ϩⲗⲟⲉⲓⲗⲉ [hloeile] (S), ϩⲉⲗϩⲉⲗ, ϩⲗⲱⲓⲗⲓ [helhel, hlōili] (B)	V297/298 < *hly* 'fly'? – see 5 BIRD.
		ḫny	ϩⲓⲛⲉ [hine] (S), ϩⲓⲛⲓ [hini] (B)	V304 *ḫny* Coptic meaning 'to row' – appears to have more general meaning in Old Egyptian of 'crossing water', but in the Royal Graves, has meaning of 'swimming – of crocodiles' or 'moving arms like oars'. EHU-Militarev shows that 'swim' is an older meaning. Phonologically hard to explain how ϩⲗⲟⲉⲓⲗⲉ [hloeile], etc. could be derived from this. Proto-Afro-Asiatic **ḫanaw/y-* (?) 'swim'; Proto-East Chadic **HanVy-* 'swim', Migama *ʔanyáw*, Jegu *ʔany*, Mubi *ʔáńà*; Proto-Omotic **(HV)wan-* 'swim' <Amh ?, Mocha *wā̃na*.
84	TAIL	*sd*	ⲥⲁⲧ, ⲥⲏⲧ [sat, set] (SB), ⲥⲉⲉⲧ [seet] (S)	V197 'tail' ⲥⲏⲧ, ⲥⲉⲉⲧ has meaning of 'penis'. Proto-Afro-Asiatic **Su/id-* 'back, tail, nape'; Proto-Semitic **Sud-* 'nape (of the neck)', Tigre *sudot* 'nuque', Akkadian *išdu (ištu, ildu, irdu, ešdu, ušdu)* 'damp course, base, foundation (of a building, reign), bottom, root, lower extremities'; Proto-High East Cushitic **sud-* 'backside', Burji (Bambala, Dashe) *súdi*, Warazi (Dullay) **sīd-* 'tail, mane' (?); Proto-Warazi **sīd-*'tail', 'mane', Gawwada (Gawata) *sííto* 'tail', Tsamay (Dume, Gaba, Kule) *siido* 'mane', Harso (Werize) *sííto* 'tail', Gollango (Wellango) *sííto* 'tail'.
85	THAT	*p3yy/t3yy*	ⲡⲏ/ⲧⲏ [pē/tē] (S), ⲫⲏ/ⲧⲏ [p^{h}ē/tē] (B)	T375 has 'seems to be identical with Beja *-b*, masculine suffix for nouns ending in a vowel. *–t* as a feminine suffix general throughout Afroasiatic.
86	THIS	*p3y/t3y*	ⲡⲁⲓ/ⲧⲁⲓ [pai/tai] (S), ⲫⲁⲓ/ⲧⲁⲓ [p^{h}ai/tai] (B)	See 85 THAT.
87	THOU	*ntk*	ⲛⲧⲟⲕ [ntok] (S), ⲛⲑⲟⲕ [nt^{h}ok] (B),	V146 < *ntk*, V says that it appears to be a purely Egyptian construction, possibly deriving from *ni-t-ā-ka* 'what is yours'
88	TONGUE	*ns*	ⲗⲁⲥ [las] (SBO), ⲗⲉⲥ [les] (AF)	V99 Proto-Afro-Asiatic **lis-* 'tongue'; Proto-Semitic **liš(š)ān-* 'tongue, language', Akkadian *lišānu* 'tongue, language', Eblaitic *li-sa-nu /lišānu(m)*, Ugaritic *lšn*, *lašānu*, Phoenician *lasoun*, Hebrew *lāšōn*, Aramaic *lšn* 'language; folk, people', Arabic *lisān-*, Epigraphic South Arabian *SAB ls$_1$n*, Geʕez (Ethiopian) *ləssan*, Tigre *ləs(s)an*, *nəssal*, Tigrai (Tigriñña) *ləs(s)an*, Amharic *ləs(s)an*, Mehri *ɛwšēn/ləšōn*, Jibbali *ɛlšɛ́n*, Harsusi *lēšen*, Soqotri *léšin*; Berber **ilVs- (<*ʔV-lis)* 'tongue', Ghadames *īləs*,

				Siwa *îləs*, Ghat *iləs*, Ayr *iləs*, Ahaggar (Tahaggart) *îləs*, Tawllemmet *iləs*, Zenaga *əčsi*, Ntifa *ils*, Seghrushen *ils*, Izdeg *ils*, Mzab *iləs*, Wargla *iləs*, Snus *iləs*, Shenwa *iləs*, Shawiya *iləs*, Qabyle (Ayt Mangellat) *iləs*; Proto-West Chadic **ḥa-lis-um*, 'tongue (your)', Hausa *hár/lšè*, Mupun *lə̄əs*, Sura *líis*, Angas *leus*, Chip *lis*, Montol *líis*, Gerke=Yiwom *lis*, Bolewa *lisi-m*, Karekare *lusu/əm*, Ngamo *linsõ*, Maha *ḍi-lis*, Kifri=Giwo *ílmíší*, Gera *ḍè-límsà*, Galambu *lĩm*, Geruma *límši*, Sayanchi *ríisən*, Boghom *ŋə-ləs*, Guruntum *laši*, Kir *ndé-láŋ*, Fyer *lés*, Bokos *ʔa-lis*, Sha *ʔa-liši*, Kulere *ʔa-lúš*, Daffo-Butura *lis*; Proto-Central Chadic **ʔV-lyas-* 'tongue', Logone *nšì*, Musgu *ɛlɛsí*; Proto-East Chadic **lyas-an-* 'tongue', 'my tongue'; Somrai *dì-lèsél*, Tumak *hìg < *lis-g, cf. bə-g (< *bV)* 'mouth', Nanchere *ke-len-d-em* 'my tongue', *Lele ke-len-d-in* 'my tongue' , Kabalai *ko-să*, Kera *ku-su-r*, Kwang *ke-lesúm* 'my tongue', Dangla *lɛ́sé*, Migama *líi-̀t*, Jegu *lɛ̀só*, Bidiya *zii-te*, Mubi *lɛ̀ésí, lísí*, Birgit *lììsì*, Mokilko *ʔílzè*, Sokoro *sólań-d-um, sɛ́lɛ̀/n*; Omotic **mi-las-* 'tongue' (probably < Amharic *məlas*) (?), Kafa (Kaficho) *mi-laso.*
89	TOOTH	*ʿibḥ, ʿibḥ-t*	ⲟⲃϩⲉ [obhe] (S), ⲁⲃϩⲉ [abhe] (A), ⲁⲃⲁϩ,ⲁⲃϩ [abah, abh] (F)	V154 No immediately obvious Afroasiatic cognates, but possible link to cognates meaning 'grasp', 'seize'. cf. D1107, D1255.
			ⲛⲁⲁϫⲉ [naaʒe] (S), ⲛⲁϫϩⲓ [naʒhi] (B)	EII.304/384 < *nḏḥ.t* Middle Kingdom < *nḥd.t* 'tooth' Old Kingdom. OS1235 South Cushitic Iraqw *anĉ-amo*, etc. 'tooth'.
		ṯs		18th Dyn. (16-14 BCE). Not attested in Coptic. Proto-Afro-Asiatic **kV(ʔ)Vs-* 'tooth'; Semitic: Arabic *kss* 'have small teeth' (?), Berber Semla *á-k_us* 'tooth', Zenaga *ūkš-ən* 'teeth'; Beḍauye (Beja) *koos* 'tooth'; Low East Cushitic *káč-u* [Tos Das]; Warazi (Dullay) *káasala* 'molar' (< S.Omot.?), South Cushitic **koʔos-* 'molar', Qwadza, (Ngomvia): *koʔosi-ko*; Omotic: Ongota *káasala*, Dime *kəsil*, Ari *kasel* But possible link to D139 'fang'
			ϣⲟⲗ [šol] (SB), ϣⲱⲗ [šōl] (S), ⳉⲁⲗ [$\chi_2$al] (A)	V260 'tooth' < *ḫnr* 'lion's tooth', since New Egyptian (16-11 BCE). No immediately obvious Afroasiatic cognates, but possible link to D103 **ʔæẑEkU* 'thorn, hook (and by extension, 'tooth').
90	TREE	*ḫt*	ϣⲉ [še] (SB), ⳉⲉ [χ_2e] (A)	V254 > ϣⲉ (SB), ⳉⲉ (A) 'wood, tree' D1893 **q'aṭV* 'tree, stick' - Semitic **χaṭṭ* 'stem, stick', Akkadian *χaṭṭ-* 'branch, twig', also attested in East Chadic, Central Chadic and South Cushitic.
			ϣⲏⲛ [šēn] (SALF), ϣⲉⲛ, ϣϣⲉⲛ [šen, ššen] (F), ϣϣⲏⲛ [ššēn](B),	*š3* 'tree' – V265 < *šn-w* 'tree' from Amarna/19th Dyn. Proto-Afro-Asiatic **SaʔVw-* 'tree, forest'; Proto-Semitic **ŝāʔ-* 'tree', Akkadian *šāʔu*; Proto-West Chadic **saw-* **say-* 'tree with thorns',Tangale *sãwɛ, sãyɛ*; Proto-Central Chadic **syaʔ-* 'wood, forest', Glavda *sũya*; Proto-East Chadic **sVw-* 'tree', 'acacia', Sokoro *súo*
			ⲥⲉⲓ [sei] (SA), ⲥⲓ [sim] (A)	V185, E307.4 *s3w, s3y* 'beam of wood' 18th Dyn. Possible relationship to above.
			ⲃⲱ [bō] (SBFL), ⲃⲟⲩ [bu] (A)	V24 < *b3t* 'bush' Old Egyptian. Proto-West Chadic **baʔu-* 'tree', Proto-West Chadic **baʔu-* 'tree', Angas *bau*, Karekare *ḅá*; Central Chadic **baH-* 'bush', 'kind of tree', Proto-Central Chadic **b[a]H-* ; Gisiga *ḅoh* 'bush', Gude *mbá'á* 'kind of tree'; Saho-Afar **bah-* 'wood', Proto-Saho-Afar **bah-*. D1653 **puʔi* 'tree, bush'

			ⲙⲉⲉⲣⲉ [meere] (S)	Cr183 possibly < *mrj* ‘a type of tree’, attested since the Book of the Dead (17 BCE onwards). No immediately obvious Afroasiatic cognates
			ⲛⲟⲩⲃⲉ [nube] (O)	Cr222 possibly < *nbs* ‘Christ’s thorn tree’ No immediately obvious Afroasiatic cognates.
91	TWO	*sn-wy* (m.), *sn-ty* (f.)	ⲥⲛⲁⲩ [snaw] (SB), ⲥⲛⲧⲉ [snte] (S), ⲥⲛⲟⲩϯ [snuti] (B) NB – Many variant forms e.g. Masc. ⲥⲛⲁⲁⲩ [snaaw] (S), ⲥⲛⲉⲩ [snew] (ALFM), ⲥⲛⲉⲟⲩ [snew] (F), ⲥⲛⲁ [sna] (B), ⲥⲛⲱ [snō] (S), ⲥⲛⲟ [sno] (AL), Fem. ⲥⲛⲟⲩⲧⲉ [snute] (S), ⲥⲛⲏϯ [sēnti] (F)	V192 – Generalised Afroasiatic/Semitic
92	WALK	*šm(y)*	ϣⲙⲙⲟ [šmmo] (SA), ϣⲉⲙⲙⲟ [šemmo] (B), ϣⲙⲙⲱ [šmmō] (S)	V264 Survives into Coptic as ϣⲙⲙⲟ (SA), ϣⲉⲙⲙⲟ (B), ϣⲙⲙⲱ (S) ‘foreigner’ < *šm3* ‘march, go’ No immediately obvious Afroasiatic cognates.
			ⲙⲟⲟϣⲉ, ⲙⲟϣⲉ [mooše, moše] (S), ⲙⲁⲁϩⲉ, ⲙⲁϩⲉ [maahe, mahe] (S), ⲙⲟϣⲓ [moši] (B), ⲙⲁⲁϣⲓ, ⲙⲁϣⲓ [maaši, maši] (F), ⲙⲟϩⲉ [mohe] (P)	V124 < New Egyptian *mš*^{c}*y* ‘march (of soldiers), travel’ < Old Kingdom *mš*^{c} ‘military expedition. Forms most likely descend from **mḫ*^{c}*y*. Possible link to D1423 **menê* – cf. West Chadic, e.g. Mupun *muàn* ‘walk’.
				swtwt ‘go for a walk’ 18th Dyn. Proto-Afro-Asiatic **wat-* ‘walk, come’; Proto-West Chadic **wat-* ‘come’, ‘go’, ‘enter’, Karekare *eti* ‘come’, Tangale *watụ* ‘come’, Pero *wátò* ‘go’, Geji *li-teddi* ‘come’, Sayanchi *wət* ‘come’, Boghom *wát* ‘enter’, *wǎt, war-əŋ* ‘enter’, Kir *wade* ‘come’, Tule *wutə̀* ‘come’; Proto-East Chadic **ʔwat-* ‘come’, Dangla *ɔ̀tɛ*, Sokoro *ɔ́tí* – Also in Berber, Semitic – link to IE (e.g. Latin vadō) D2461 **wVd̦ V̦ʕV* ‘walk, go, set out for’
			ⲗⲉⲗⲓ [leli] (B)	V97 ⲗⲉⲗⲓ (B) ‘walk, wander’ – related to Berber *lulli* – ‘wander, err’.
93	WARM	*ḫmm, šm*	ϩⲙⲟⲙ [hmom] (S), ϧⲙⲟⲙ [χmom] (B), ⳉⲙⲁⲙ [hlam] (A),	V301 ‘to heat, be hot, burning’ Old Kingdom EIV.468 Proto-Afro-Asiatic **ŝam-* ‘sun’; Proto-Semitic **ŝam(ŝam)-* ‘sun’, ‘sun-heat’, Akkadian *šamšu* ‘sun’, Hebrew *šemeš* ‘sun’, Syrian Aramaic *šemš-* ‘sun’, Arabic *šams-* ‘sun’, Epigraphic South Arabian *šmŝ* ‘sun’, Tigre *šämš* ‘sun’, Soqotri *šam*; Proto-Berber **sam-* ‘lightning’, Ahaggar (Tahaggart) *e-ssam*, Figig *i-ssim*, Proto-West Chadic **[ŝ]Vm-* ‘sun’, Angas *lem* ‘be hot, be burning’.
		śrf		EIV.195 Proto-Afro-Asiatic **sirVf-,* ‘warm’; Semitic: Syriac *pšr*; Proto-West Chadic **sVrVP-* ‘boil’, Mupun *sə̀rə̀p*; Proto-Central Chadic **sirVf-* ‘covered with sweat’, Mafa=Matakam *širf-eʔe* T1.201 *srf* Semitic **ŝrp*, Akkadian *šrp* ‘to burn’, Hebrew *ŝrp*.

94	WATER	*mw*	ⲙⲟⲩ [mou] (S), ⲙⲱⲟⲩ [mōu] (AL), ⲙⲁⲩ [maw] (FLA)	V126 Proto-Afro-Asiatic **maʔ-* ‘water’; Proto-Semitic **maʔ/y-* ‘water’’, Akkadian *mû*, Ugaritic *my*, Hebrew *mayim* (pl.), Aramaic *mayȳ-* (pl.), Syrian Aramaic *mayy-* (pl.), Arabic *māʔ-*, Epigraphic South Arabian *mw*, Geʕez (Ethiopian) *māy*, Tigrai (Tigriñña) *may* ‘water, rain’, Harari *mīy*, East Ethiopic Wol *mäy*, Mehri *ḥemūh*, Jibbali *mih*, Harsusi *ḥemyoh*; Proto-West Chadic **maH-* ’water’, Guruntum *mā̃*; Proto-Central Chadic **maʔi/u-* ‘water’, ‘river’, ‘dew’, Fali Kiria *məwà* ‘river’, Gude *m̀aʔínə* ‘water’, Fali Bwagira *m̀aʔyin*, Bachama *màʔyin* ‘water’, Logone *mū* ‘dew’; Beḍauye (Beja) *muʔ-* ‘liquid’’; Proto-South Cushitic **maʔay-* ‘water’, Iraqw (Mbulu) *maʔay*, Asa-Aramanic *maʔa*, Qwadza (Ngomvia) *maʔaya*; Dahalo (Sanye) *maʔa* ‘water’.
		nnw		Proto-Afro-Asiatic **nin-/*nun-* ‘water’; Proto-Central Chadic **nin-* ‘water’, ‘dew’, Mbara *nìní-ḍ* ‘dew’, Munjuk *enini* ‘dew’, Musgu *énɛni* ‘dew’, Masa *nī*, *niná* ‘water’.
				nwy.t, *n.t* Middle Kingdom Proto-Afro-Asiatic **niw-* ‘water’; Proto-Central Chadic **ni-* ‘water’, Gudu *nyoe/a*, Masa *nī*; East Chadic **nVm-* water a pl. form (?)
95	WE	^{c}*inn*	ⲁⲛⲟⲛ [anon] (SB), ⲁⲛⲁⲛ [anan] (ALF)	V13 Cf. 42 I – n.b. Berber has *nek*^{W}*ni* Saho-Afar *nanu*, Somali *inna-ga* ‘we (inclusive)’, *anna-ga* ‘we (exclusive)’, although inclusive/exclusive distinction is not present in general Afroasiatic.
96	WHAT?	*w*^{c}	ⲟⲩ [u] (SB), ⲉⲩ [ew] (SL), ⲟⲩⲁ [ua] (M), ⲟⲩⲱ [uō] (S), ⲟⲩⲟ [uo] (A), ⲟ [o] (AL), ⲱ [ō] (SA), ⲟⲩⲛ [un] (SF)	V228 < *w*^{c} ‘one, someone’. V. variable. T99 Berber: Guanche **wa* ‘which’; Agaw **wä*, *wə-* ‘what’; Proto-Chadic **wa* ‘who’, also Beja *aw* ‘who?’, Agaw **ʾaw* ‘who?’.
		See note	ⲁϣ [aš] (SB), ⲉϧ [eχ_2] (A), ⲉϣ [eš] (LF), ⲁϧ [aχ_2] (P)	V20 < *iẖ* ‘what?’ New Egyptian, Demotic < *iẖt* ‘thing’ Pyr. Proto-Afro-Asiatic **ʔiẖ-* ‘thing’; West Chadic **ʔyaH* ‘thing’, Bolewa: ʔya; Central Chadic **ʔyaH-* ‘thing’ Hwona: *ʔya*. D16 **ʔaʹhʾa* ‘thing’ in sense of contraction of *mi ʔaha* ‘what thing?’
		ỉš.t, *ỉšs-t*		Pyramid texts ‘thing’ – Presumably cognate with above. Proto-Afro-Asiatic **ĉayʔ-* ‘thing; what?’; Proto-Semitic **ŝayʔ-* ‘thing’, ‘what?’, Arabic šayʔ- ‘thing’, ‘what?’, Mehri *ŝī* ‘thing, anything, something’, obl. ŝīən, -ŝən, *hēŝən* ‘what?’, Jibbali *ŝé* ‘thing’, Harsusi ŝī, ŝəy, Soqotri *ŝī*, *ŝiʔ* ‘thing’

97	WHITE	*ḥḏ*	ϩⲁⲧ [hat] (SB)	Proto-Afro-Asiatic **çaḥ-* 'be white'; Proto-Semitic **ṣVḥ-* 'be white', 'shimmer', 'be clear', Hebrew *ṣḥḥ* 'be white', Aramaic *ṣḥḥ* 'shimmer', Syrian Aramaic *ṣaḥā* 'be clear', Arabic *ṣhw* 'be clear', Geʕez (Ethiopian) *ṣḥw* 'be clear', Tigre *ṣhy* 'be clear', Tigrai (Tigriñña): *ṣäḥe* 'be clear', Soqotri *ṣḥy* 'be clear'; Proto-West Chadic **çā/ī* 'get light, have light -(of town)', Pa'a *càa, cii*; Proto-Central Chadic **ç/cay-* 'shining', Mofu-Gudur Mafa *càyaʔ a*; Proto-South Cushitic *caʔati* (unless < **çaḥ-*); Proto-Omotic **çaH-* 'white', Ari *çaa-mi* T1.155 *ḥḏ* Semitic Arabic *ḥaḍa'a* 'to light up'; East Berber Ghadames *e-ḍḍu* 'light'.
98	WHO?	*ỉn-m*	ⲛⲓⲙ [nim] (SB)	V142 < Demotic *nm* cf. D1355 **mi* 'what'? – General in Afroasiatic
99	WOMAN	*ḥm.t*	ⲥϩⲓⲙⲉ [shime] (S), ϩⲓⲟⲙⲓ [hiomi] (BF), ϩⲓⲙⲉ [hime] (S)	V205-6 < *zy.t ḥm.t* Female person, for *zy,* cf. 64 PERSON Presumably *ḥm.t* linked to D37 **ʔemA* 'mother' – General Afroasiatic, since D notes 'this etymon is the most probable source of the feminine ending of pronouns in Berber, Egyptian and Chadic' (D, p. 122).
100	YELLOW	*ḳnjt*		E.V52 New Kingdom, related to *ẖnt* EIII.301, 18th Dyn. Proto-Afroasiatic **ḳVn-* '(be) white, (be) yellow'; Proto-Semitic **(ʔV)ḳVnVʔ/w-* color of lapis lazuli; Proto-Central Chadic **kun-H-* 'white', Bachama *kùŋ*, Bata *kúŋẹ*; South Cushitic *qań* 'white, red and black colour of cow'.
			ⲙⲣⲟϣ [mroš] (SB)	Cr183, 'red or yellow' cf. 66 RED

KEY:

As in the previous table, **Egyptian entries are drawn from Old Egyptian/Pyramid texts (24th century BCE)** unless otherwise stated.

3rd column entries represent Coptic dialects: A = Akhimic, B = Bohairic, F = Fayumic, L = Lycopolitan, O = Old Coptic, S =Sahidic.

In the final column, V+number represents the reference in **Vycichl,** Cr+number, the reference in **Crum**, Č+ number, the reference in **Černy.**

Unless otherwise stated, Afroasiatic cognates are drawn from **Militarev**'s entries in Starostin's 'Tower of Babel' database (which has no index numbering system), but also from **Dolgopolsky**'s Nostratic dictionary (D+number), **Orel/Stolbova** (OS+number) or **Gabor Takacs**' Egyptian etymological dictionary (T+number) and are presented in detail in the appendix (for references cf. Footnotes 1-8). Since the author claims no specific expertise in Afroasiatic, his aim has merely been to show that other authors have identified such cognates and has not entered into details regarding the plausibility of such etymologies or reproduced any qualifying comments.

Book Review

Kinship, Language and Prehistory: Per Hage and the Renaissance in Kinship Studies, Ed. Doug Jones and Bojka Milicic, University of Utah Press, 2011. xiii + 247 pp.

The pioneering work of Lewis Henry Morgan led to the emergence of a general consensus in the 19th century that kinship was one of the core aspects of social organisation, that its study offered one of the most promising windows onto human prehistory and furthermore, that the earliest societies were matrilineal.

In the 20th century, these positions came under systematic attack, notably by Franz Boas, who, on the basis of his observations of the Kwakiutl, rejected the notion that societies had inexorably evolved from matrilineal to patrilineal ones, by Radcliffe-Brown[1] and latterly by anthropologists such as David Schneider, who denied that kinship could shed any useful light on cross-cultural features or even that it existed at all in a genealogical sense.

In parallel to this, from the late 1950s onwards, a series of linguists beginning with Roman Jakobson, and latterly Larry Trask, denied that the extensive similarities of core kinship terms such as 'mother' and 'father' across the world were evidence of their common origin in the original human language.

This furious denial of the self-evident will evidently evoke a sense of *déjà vu* among long-rangers. It is thus salutary that the editors of this volume have used a commemoration of Per Hage, the anthropologist who pioneered the use of mathematical approaches, notably graph theory, to model the complex interactions of exchange and kinship systems, to return to the 19th century roots of comparative kinship by presenting a volume of 17 papers, split into two main sections: Kinship and Prehistory and Kinship, Language and Mind.

As David Jenkins points out in his review of Hage's contribution to kinship theory (Chapter 2), Hage's major insight was that Joseph Greenberg's theory of language universals could be used to reconstruct the evolution of kinship terminology. Greenberg had analysed hundreds of languages and made two key observations: that 'disjunctive' terminologies did not occur or were extremely rare and that marking effects were found extensively in kinship terminology[2].

---

[1] Cf. Chris Knight, pp. 25-42, in *Émergence et évolution de la parenté*, Ed. Jean Lassègue, Eds. Rue d'Ulm, 2007. http://www.revue-texto.net/docannexe/file/104/lassegue_emergence.pdf

[2] By way of a brief explanation: a disjunctive term is a kinship term which includes such disparate types of relative that it cannot be defined formally. For example, there are no cases of languages in which one word denotes both 'father and mother's brother' and another denotes 'father's brother'. Hage provided a graph theoretic definition of this phenomenon in that 'father' and 'father's brother' were conjunctive since they could be traced back to the same ancestral node, in that they both share a common father, while 'father' and 'mother's brother' could not.

Marking is generally used in the sense of the addition of affixes/grammatical modification to a basic word to convey additional information (*e.g.* 'brother' is more basic than 'brother-in-law', since the 'in-law' addition conveys additional information about the fact that the kinship link is via marriage). Greenberg generalised this sense to any hierarchical relationship in which an unmarked term is more general or frequent than a

By assuming that marking took place in a particular order, with unmarked terms being added last or lost first, Hage used such approaches to transform Greenberg's rules into a model of the evolution of kinship systems, which evidently carried with it implications for social organisation, migration patterns, language stability and change[3].

Chapters 5-11 of this volume infer the evolution of terminologies using this approach. Christopher Ehret reconstructs Nilo-Saharan (Chapter 5), Marck, Hage, et al. reconstruct Proto- Bantu and East Bantu (Chapters 6 and 7), Marck and Bostoen compare Proto-Oceanic and Proto-East Bantu (Chapter 8), Hage looks at Oceanic cousin terms and marriage alliances (Chapter 9), McConvell and Keen analyse the transition from a symmetrical Dravidian to an asymmetrical system in Cape York Peninsula and North East Arnhemland (Chapter 10), while Chapter 11 consists of Hage's own demonstration that an analysis of a single term **Pa* (Father's sister, Mother-in-Law) can be used to show that Proto-Central Amerind had a Dravidian-type kinship system.

The focus in all of these articles is on linguistic analysis, some of it verging on the impenetrably complex for an outsider such as myself, although Ehret and Marck/Bostoen do have interesting discussions on the broader implications for their results with regard to social organisation in prehistory, concluding that the respective protolanguages provide evidence for matrilineality/matrilocality. In a sense, this marks a return to the 19th century espousing of matrilineality.

The authors appear to agree with Divale, who argued in 1984[4] for a correlation between matrilocality and absence of internal conflict, in that frontier societies would tend to be matrilineal, for example, in Austronesian societies expanding throughout Oceania, where this expansion would fall on the shoulders of the men, whose survival on potentially dangerous expeditions was much more uncertain than that of the women who stayed at home. Matrilineality also appears to become progressively less effective as population sizes increase.

These papers are admirable achievements of inductive reasoning, but they do abandon the reader in the late Palaeolithic 12-15,000 years ago. Do we simply assume that all kinship systems were monolithically matrilineal and matrilocal from *Homo Erectus* until the dawn of the Holocene and then started to undergo all manner of transformations? Few answers are provided to this question.

There are evidently anthropologists such as Camilla Power[5], who are prepared to argue that this was indeed the case. Power builds on George

---

marked one. Hence, in English, 'man' is unmarked and 'woman' is marked, since 'man' is more general, referring not only to male human beings but to human beings in general.

[3] Hage made use of Greenberg's hypothesis that marked terms were added to existing unmarked terms or lost while unmarked terms survived to model changes in terminology in stepwise fashion. A more accessible and explicit account of how he did this is given in 'Marking Universals and Evolution of Kinship Terminologies: Evidence from Salish', Hage, *Journal of the Royal Anthropological Institute,* Vol. 5, No. 3 (Sep. 1999), pp. 423-441 – Available on JSTOR.

[4] Divale, W., *Migration, external warfare and matrilocal residence in pre-literate societies,* UMI Research Press, 1984.

[5] Power, C., pp. 17-25, in *Émergence et évolution de la parenté,* Ed. Jean Lassègue, Eds. Rue d'Ulm, 2007. http://www.revue-texto.net/docannexe/file/104/lassegue_emergence.pdf.

Williams' 'grandmother hypothesis', which argued that the extension of female longevity beyond the menopause, probably from *Homo Ergaster* onwards, *i.e.* to produce grandmothers who were on hand to aid with child rearing, was a key adaptation which supported the evolution of children with larger brains and more advanced cognitive functions, albeit who took much longer to reach self-sufficiency than other higher primate species, such as chimpanzees, the females of which tend to die relatively soon after they become infertile. According to Power, while men, who are principally hunters, would make some contribution to supporting their children, their supplies of meat would have been too unreliable to guarantee the constant support that a grandmother could have provided by foraging for roots and tubers. Women would have thus pressed home their advantage by forming matrilineal clans. It also represents a return to 19th century ideas and we may note en passant that such ideas of matrilineality greatly influenced Marx and Engels in their conception of a utopian primitive communist society. This no doubt explains in part the appeal of this theory to Knight and Power, who are card-carrying Marxists. That being said, the conjecture is an interesting one.

Another notable attempt to reconstruct an ur-kinship system is Nicholas Allen's tetradic theory[6], which argues for a minimal structure consisting of a division of societies into four moieties, with children in different moieties from their parents, and specific rules about intermarriage between these moieties. If anything, the authors in this book, notably Dwight Read (Chapter 13) are (I suspect, prematurely) dismissive of Allen's model, on the grounds that there is no evidence for its actual existence except in the Khoisan-speaking !Kung. It may hence actually represent a parallel to the first major split in proto-Sapiens between Khoisan and non-Khoisan. I am curious about Read's claim, since it is clearly at variance with Allen's that there are Australian tribes[7] with tetradic-like kinship systems.

Chapters 3 and 4 showcase work on proto-Sapiens kinship terminology (PAPA, MAMA and KAKA) by Alain Matthey de l'Etang and Pierre Bancel, the first written with Merritt Ruhlen and the second with John Bengtson. If anything, much of their material is familiar from their more detailed, more richly speculative and frankly more interesting papers in *Mother Tongue*[8] and the Hal Fleming *Festschrift*[9].

---

[6] For an account of this: see Allen, N. J. pp. 44-57, in *Émergence et évolution de la parenté*, Ed. Jean Lassègue, Eds. Rue d'Ulm, 2007 or Allen, N. J., Chapter 5 in *Early Human Kinship: from sex to social reproduction*, Blackwell, 2011.

[7] N.J. Allen, ibid, p. 45.

[8] Tracing the ancestral kinship system: The global etymon *kaka.* Part I: A linguistic study. MT VII: 209-43 (2002); Tracing the ancestral kinship system: The global etymon *kaka.* Part II: An anthropological study. MT VII: 245-58 (2002); The global distribution of (P)APA and (T)ATA and their original meaning. MT IX: 133-169 (2005); Kin tongue: A study of kin nursery terms in relation to language acquisition, with a historical and evolutionary perspective. MT IX: 171-90 (2005) [Ed.].

[9] *In Hot Pursuit of Language in Prehistory: Essays in the Four Fields of Anthropology : in Honor of Harold Crane Fleming*, ed. J.D. Bengtson, 2008.

Chapter 4 presents new statistical evidence which does appear to support the extreme polarity in the use of the term for one sex, although the data for PAPA (terms in over 70% of languages mean father/father's brother and only 5% mean mother/mother's sister) and NANA (terms in over 70% of languages mean mother/mother's sister and only 6% mean father/father's brother) are more convincing than MAMA (where terms in over 50% of languages mean mother/mother's sister, but 27% mean father/father's brother) and KAKA (where terms in 34% of languages mean mother's brother).

While I have always accepted as self-evident their basic point that the existence of an extended kinship term like KAKA in many different families across the world argues against the claims *e.g.* Jakobson and Trask, *i.e.* that MAMA/TATA/KAKA really do derive from proto-Sapiens words and are not merely serially reinvented *Lallwörter*, many linguists do not. To play devil's advocate, I thus wonder how to conceive of a cast iron thought experiment which will settle the matter once and for all. It seems to me that the best way to do this is to analyse kinship words which are not necessarily taught to babies, such as 'husband', 'wife', since the relationships that they express do not involve the baby itself (a possible choice would be KUNA/GUNE: 'woman/wife', reconstructed as a word of proto-Sapiens by Trombetti and then independently by Ruhlen and Bengtson). Another idea would be to find a word with widespread occurrence as a compound with a meaning shifted away from kinship like Trombetti's 'son' in 'finger = son of the hand'.

It is also curious that the authors overlooked AJA 'mother, older female relative', which Bengtson & Ruhlen reconstructed as a global etymology in 1994[10], since this term is clearly present in Khoisan, *e.g.* in Hadza as *aija* 'mother, grandmother, aunt', as well as in *e.g.* !Kung *ai* 'mother'. Not only does this fail to fit the phonological pattern of a *Lallwort*, but more importantly, it must predate the split between Hadza and the other Khoisan languages, which Tishkoff et al.[11] have dated to at least 35,000 years ago, probably to 50,000 years ago and possibly anything up to 100,000 years ago.

My own view, based on archaeological/climatological evidence for Out of Africa dates, is that genetic dates have a systematic bias to the low side, so that the true dates are probably much higher. There is an evident corollary here, in that if a single language family can maintain a high enough degree of cognacy at time depths of 50,000 years or so to be clearly identifiable as such (and the link between Hadza/Sandawe and the other Khoisan languages was demonstrated as long ago as 1910 by Trombetti), then why shouldn't other families with deep roots have time depths of the same order of magnitude? By this token, Ehret's dates of 12-15,000 years for proto-Nilo-Saharan, which appear to be based on linguistic archaeology, may also be too low.

There is also an important historiographic omission in these papers. As the authors rightly note, 19th century writers such as Buschmann (1852) were already carrying out comparative research into kinship terms, although he favoured a fanciful explanation of MAMA/PAPA as representing a polarity between a hard sound for PAPA, which reflected the 'hardness' of fathers, and a soft nasal sound for MAMA, which reflected the 'softness' of mothers. The authors nevertheless appear to be unaware of late 19th/early 20th century work which closely anticipates their own.

---

[10] Bengtson, J.D, & Ruhlen, M., Global Etymologies, in Ruhlen, M., *On the Origin of Languages*, pp. 277-336, Stanford University Press, 1994.

[11] Tishkoff, S.A., History of Click-Speaking Populations of Africa, Inferred from mtDNA and Y Chromosome Genetic Variation, *Mol. Biol. Evol.* (2007) 24(10): 2180-2195.

In particular, in *Comparazioni Lessicali* (1920), Trombetti reconstructed a number of kinship terms [12]: *kwe-, kwer* 'marry, father-in-law' in Niger-Congo/Nostratic, *kali* 'wife, young woman' in Niger-Congo, Afroasiatic and Caucasian and most notably, *koto, kodo* 'other, friend, elder brother' in Afro-Asiatic, Niger-Congo, Dravidian, Australian. Austroasiatic, noting that the words were "derived from a *Lallwort* of the type of Semitic *aχ*". The last of these etymologies is evidently very close to KAKA.

As Trombetti nevertheless notes in his section on interjections, the first person to explain that the more basic kinship terms, MAMA, PAPA, TATA had been present in proto-Sapiens was Paul Kretschmer, who published a historical grammar of Greek in 1896, in which he dedicates several pages to *Lallwörter*. Kretschmer's interest derives from the fact that he found so many of them in personal names in Asia Minor (in what we would now call the Anatolian languages) but the scope of his analysis is impressively wide and apparently free of the blinkers of most Indo-Europeanists of the day.

Kretschmer dismisses Buschmann's theory of hard sounds for hard fathers, etc., instead positing that babies progressively produce sounds as they gain motor control of their soft palate and that these sounds are 'appropriated sequentially', with mothers, who spend the most time with their babies, having first call on using an infantile sound to name themselves. Evidently, there is nothing different here from Jakobson's argument. What is nevertheless enormously significant is Kretschmer's observation that "*naturally, only the original process was like this, through which the allocation of meaning was settled once and for all*".[13] I think that it is abundantly clear from this that he (and presumably Trombetti also) considered such words to be part of a proto-human language.

Indeed, Kretschmer almost precisely anticipates Bancel/Matthey de l'Etang's arguments by arguing that although Buschmann had highlighted a number of terms which violate the paradigm of M/N for mother and T/P for father, there were too many positive matches to dismiss these correlations as random. He also pointed out that such sounds can also be appropriated for other meanings (*e.g. cacare* 'to defecate', Italian *pappare* 'to eat') and hence, that it is by no means inevitable that a baby's first sounds will always be assigned the meaning of 'mother' or 'father', making a polygenetic origin for such terms less likely.

---

[12] Trombetti, A., *Comparazioni Lessicali* (1920).

[13] *"Natürlich war so nur der ursprüngliche Vorgang, durch welchen die Bedeutungsverteilung ein für alle mal geregelt ist".* (Kretschmer, op. cit., p. 355)

The second part of the book, Kinship, Language and Mind, begins with a paper by Warren Shapiro which rebuts Janet Carsten's claims that kinship is merely reflection of 'relatedness' arising from shared food or housing, and arguing that kinship is universally based on genealogical connection.

In Chapter 13, Dwight Read is at pains to argue that the conceptual structure of kinship systems cannot be explained by genealogy alone but also involves mastery of the ability to operate an abstract set of generative 'grammatical' rules, which he extends with Giovanni Bennardo into Chapter 14 with a comparative analysis of American and Tongan kinship systems, the former of which is shown to be based more on 'parent-child' relationships and the latter on sibling relationships.

In a brief article, 'Marking and Language Change', which forms Chapter 15, David Kronenfeld proposes that markedness drives linguistic change. In this, he follows Greenberg, who argued that unmarked words will tend to arise and be lost before marked ones and hence permit predictions of diachronic events. I wonder about his argument since there is no shortage of counterexamples of the inverse process, whereby the marked word drives out the unmarked one, most notably compounds in Latin (*e.g. caseus formaticus> fromage*, *persicum malum > pesca, peach, jecor ficatus > fegato, foie*.

In Chapter 16, Doug Jones begins with a historical essay, outlining how the structuralist enterprise of trying to use linguistic models to explain culture in general failed and was replaced with the Chomskian model of a specific language module, in which grammatical rules represent structural features of a specific language organ. He then proceeds with an analysis of kinship terminology in terms of optimality theory, which essentially entails the sequential application of constraints to select the correct kinship term for a given input. While Jones is happy that the rules of kinship conform to a 'grammar', he is circumspect about the limited scope for analysing other areas of cognition in terms of grammatical rules.

The final paper in the volume by Bojka Milicic asks 'Is there a kinship module?' and suggests, on the basis of her analysis of Quechua and Croatian children, who appear able to navigate very well around kinship terminology, that there may be, although she concedes that this 'module' probably overlaps with a language module.

As an amateur palaeolinguist with no training in theoretical linguistics, I would be the first to admit 'lack of standing' to criticise the papers in the second part of this book. Having said this, I found my eyebrows spontaneously rising on several points and as I have taken on the task of reviewing this volume, I shall state my views, for what they are worth.

Most notably, a number of the authors appear to be attempting to work within paradigms, *e.g.* Piaget, Chomsky's theory of the poverty of stimulus and the notion of modularity, which have been or are in the process of being discredited, and in particular, that they were still pursuing the structuralist dream of defining a kinship system in purely linguistic terms.

It nevertheless seems to me that the real challenge to such studies is posed by work such as Ehret's on Nilo-Saharan and McConvell and Keen's on Kariera, which clearly demonstrate the fluidity of kinship systems. Indeed Ehret's analysis of Nilo-Saharan kinship (cf. p. 56) suggests that over recent millennia, cousin terminologies have seldom been stable for more than a few centuries. Among these authors, only Read attempts to engage with the evolutionary dimension of kinship systems, although he comes to few conclusions beyond dismissing Allen's theory and arguing that the original kinship system may have been genealogical in nature.

Any purely synchronic analysis of a kinship structure may be useful for exposing the particular generative rules of that structure (and I suspect that a formal system may be defined from several points of reference, which are all equally valid), but will not tell us anything about how such rules emerge. Hence, for example, while optimality theory may be able to dissect a kinship system into a hierarchy of constraints, it does not explain why different cultures arrive at different rankings of constraints or how or why these may change.

This in turn would seem to undermine the notion of a 'kinship module'. Milicic stops short of proposing a 'strong' (i.e. self-contained) kinship module, but does suggest that it may form part of a more general language module.

Her argument nevertheless appears to rest on a dogmatic assumption of the truth of Chomsky's 'poverty of stimulus' argument, i.e. that children's ability to process and elucidate grammatical rules goes way beyond anything explicable on the basis of external inputs. If I remember my own childhood, there was no shortage of kinship stimulus, in that all of my relatives were given titles: 'Aunt Barbara', 'Uncle Edgar', 'Cousin Judy', 'Grandpa Les', etc.[14]. Furthermore, in some languages, kinship terms are used extremely loosely, *e.g.* 'uncle/aunt' in English, '*tio/tia*' in Brazilian Portuguese, with it very much an individual choice as to whether the use of this term is restricted to blood relations.

If, as the authors in this volume argue (and I accept), kinship structures are not simply improvised but represent a deliberate design, presumably in the face of socioeconomic constraints, then it is hard to see how this design process would be innate to or even understandable by children, since it would require a complete understanding of many other dimensions of society, such as availability of resources, availability of potential brides and grooms, religious beliefs, taboos, inter-tribal diplomacy and power relations. If this is true, then language may well serve as a subsequent record of changes in kinship terminology but will not be able to explain why they happen.

---

[14] Milicic also gives an example of a 3-year-old Croatian boy who, during a long stay away from his father with his uncle, began to address the uncle as 'father' and was then corrected by his 4-year old cousin, who begins to refer to her own father as 'uncle' in an attempt to coax her younger cousin into using the correct term. Milicic seems to think that this is evidence for some innate understanding of kinship in children. I see it as a purely linguistic phenomenon – *i.e.* it is just one more example of descriptive terms such as 'my/your', 'here/there', for which the signified object is contingent on the speaker's frame of reference. Indeed, is there any essential difference in the situation in which the 3-year-old boy refers to his cousin's pet as 'my dog' and his older cousin corrects him by pointing at her own dog and saying 'your dog'? One would hardly argue from this that dogs are included in a specific kinship module.

In this way, drafting of kinship rules is more likely to be akin to law-making than to some innate cognitive process.

We need only recall the reply of the Arapesh tribe of New Guinea to Margaret Mead's questioning of them about brother-sister incest to observe that such peoples are entirely aware of the socioeconomic dimensions of kinship.

> *"What, you would like to marry your sister? What is the matter with you anyway? Don't you want a brother-in-law? Don't you realize that if you marry another man's sister and another man marries your sister, you will have at least two brothers-in-law, while if you marry your own sister you will have none? With whom will you hunt, with whom will you garden, who will you visit?"*

This requires cognitive abilities which go well beyond the manipulation of a series of grammatical rules and it seems to me that one will rapidly get into very deep water by arguing that kinship features can be encapsulated in a specific module and separated from other non-kinship features of social and economic organisation.

Lastly, Milicic's statement that Bancel and Matthey de l'Etang regard kinship vocabulary as the core of human protolanguage appears to put words into their mouth. If I have understood them correctly, they merely claim that the near ubiquitous words MAMA, PAPA, KAKA derive from proto-Sapiens and not that they have any privileged role or are "the very origin of language".

As Lieberman has argued, language in *Homo Sapiens* implies the adaptation of circuits already present in older hominids, and hence, the ability of these earlier hominids to speak in some shape or form. If the grandmother hypothesis is correct and a matriarchal model of social organisation is a corollary of encephalisation, then the emergence of the original kinship system could have predated the emergence of *Homo Sapiens* by more than a million years and when we look at proto-Sapiens, we already observing a relatively sophisticated society. Perhaps the archaeological record can shed some light on this.

Jonathan Sherman Morris
São Paulo, Brazil

The author would like to thank Professor David Shanks (UCL, London) and Pierre Bancel (ASLIP) for their invaluable discussions and assistance with bibliographical material, but also points out that all errors and interpretations are his own.

Letter from Owi Nandi

Received May 30, 2012

I would like to take this great opportunity to write my first small article in the form of a letter for a journal I have learnt to love, *Mother Tongue*. I was introduced to its importance in the Field of Long Range etymologists by a wonderful colleague, Harold Fleming from Gloucester Massachusetts.

My studies at the university of Zürich, Switzerland encompassed many fields of Biology, but also included some studies in Linguistics, for instance in Kiranti languages with Prof. Karin Ebert or Africanistics with Thomas Bearth.

After a long time reading about the relationships within Indo-European and having a glimpse of Indo-Europeanistics with the outstanding Professor Dunkel in Zurich my interests went into common patterns in all languages.

My studies were also nurtured by the works of Irenäus Eibl Eibesfeldt, the renowned German human ethologist who in his fieldworks discovered a number of psycho-ethological universalisms.

Readers interested in my book, which went live on the 22nd of February 2012, are invited to order via Barnes and Noble or amazon.com (* search for "Owi Nandi" or "Human Language Evolution").

I am now thinking of a computerized study on the phylogenetic relationships among Eurasiatic languages including again a more detailed focus on Indo-European languages, as these are also hitherto not fully resolved.

It would be wonderful if we could be a larger team of Long Range Linguists from the United States and Russian Federation (maybe a team as in the Tower of Babel project by Sergei Starostin). As a systematic biologist, I am familiar with cladistic software and algorithms.

I herewith invite specialists in well established linguistic taxa (Baltists, Slavists, Celticists, Uralists, Yukaghirists, Macro-Altaists, Dravidiansts, Dene-Caucasiansts, specialists in "Paleosiberian" languages, Inuitists, Amerindianists, Austrists, specialists in former language isolates [for Basque, Nihali and Ainu, see previous publications in *Mother Tongue*], Andamanists, Paleo-Sundaists [in the sense of Timothy Usher], Papuanists, Australianists, Semitists, Kartvelianists) for a long-lasting project on the cladistic relationship of out-of-Africa languages.

Owi Nandi
Zürich, Switzerland
owinandi@yahoo.com

The Nostratic Hypothesis in 2011
Trends and Issues

Journal of Indo-European Studies

Monograph No. 59

A comprehensive summary of the Nostratic Hypothesis as of 2011, providing (1) the basis for the reconstruction of Proto-Nostratic as presented by Allan Bomhard, Vladislav M. Illic-Svityc, Aharon B. Dolgopolsky, Joseph H. Greenberg, and others; (2) a comparative vocabulary of Proto-Indo-European stems with proposed Nostratic etymologies and cognates from other branches of Nostratic; (3) a systematic evaluation of the material contained in Aharon Dolgopolsky's *Nostratic Dictionary*.

1/ THE RECONSTRUCTION OF PROTO-NOSTRATIC

2/ INDO-EUROPEAN STEMS WITH A NOSTRATIC ETYMOLOGY

3/ ADDITIONAL NOSTRATIC ETYMOLOGIES

Index Verborum/ English-Nostratic
Index to Chapter 3

BY ALLAN R. BOMHARD

Paperback: ISBN 9780984538300 retail: $64.00
Hardback: ISBN 9780984538317 retail: $98.00

Visit www.jies.org for a further online discount

P&P $4.50, or $7.50 foreign. VISA/MC, US$ cheque or M.O.

The JIES Monograph Series

1133 13th St. NW, #C-2, Washington DC 20005
www.jies.org, iejournal@aol.com, T 202 371-2700, F 202 371-1523

Note of Interest

A DNA Study Shows that the Earliest Americans Arrived in Three Waves of Migrants Rather than Just One

Confirming conclusions reached via linguistic analysis by Joseph Greenberg some years ago, a team led by Harvard geneticist David Reich has found through analysis of the genome of Native Americans that the earliest populations of the Americas arrived in three waves of migrants from Siberia rather than just one. The genetic data show that a large migration around 15,000 years ago was followed by two smaller ones. Reich's group refers to that first population as 'First American'. Dr. Greenberg used the term 'Amerind' when referring to the first migrants. The next two migrations comprised the ancestors of speakers of Eskimo/Aleut languages and the ancestors of speakers of Na-Dene languages.

These finding were reported in the journal *Nature* online in July, 2012. Nicholas Wade of the *New York Times* (page A3, July 12, 2012) reported on the *Nature* article placing emphasis on the fact that this research validates Joseph Greenberg's linguistic analysis.

The research was also reported in the *Harvard Gazette* as well as some other publications.